DOCUMENT RESUME

ED 021 378 EC 002 583

By- Magary, James F., Ed.; McIntyre, Robert B., Ed.

ANNUAL DISTINGUISHED LECTURES IN SPECIAL EDUCATION (5TH, UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF EDUCATION, LOS ANGELES, SUMMER 1966).

University of Southern California, Los Angeles. School of Education.

Pub Date 67

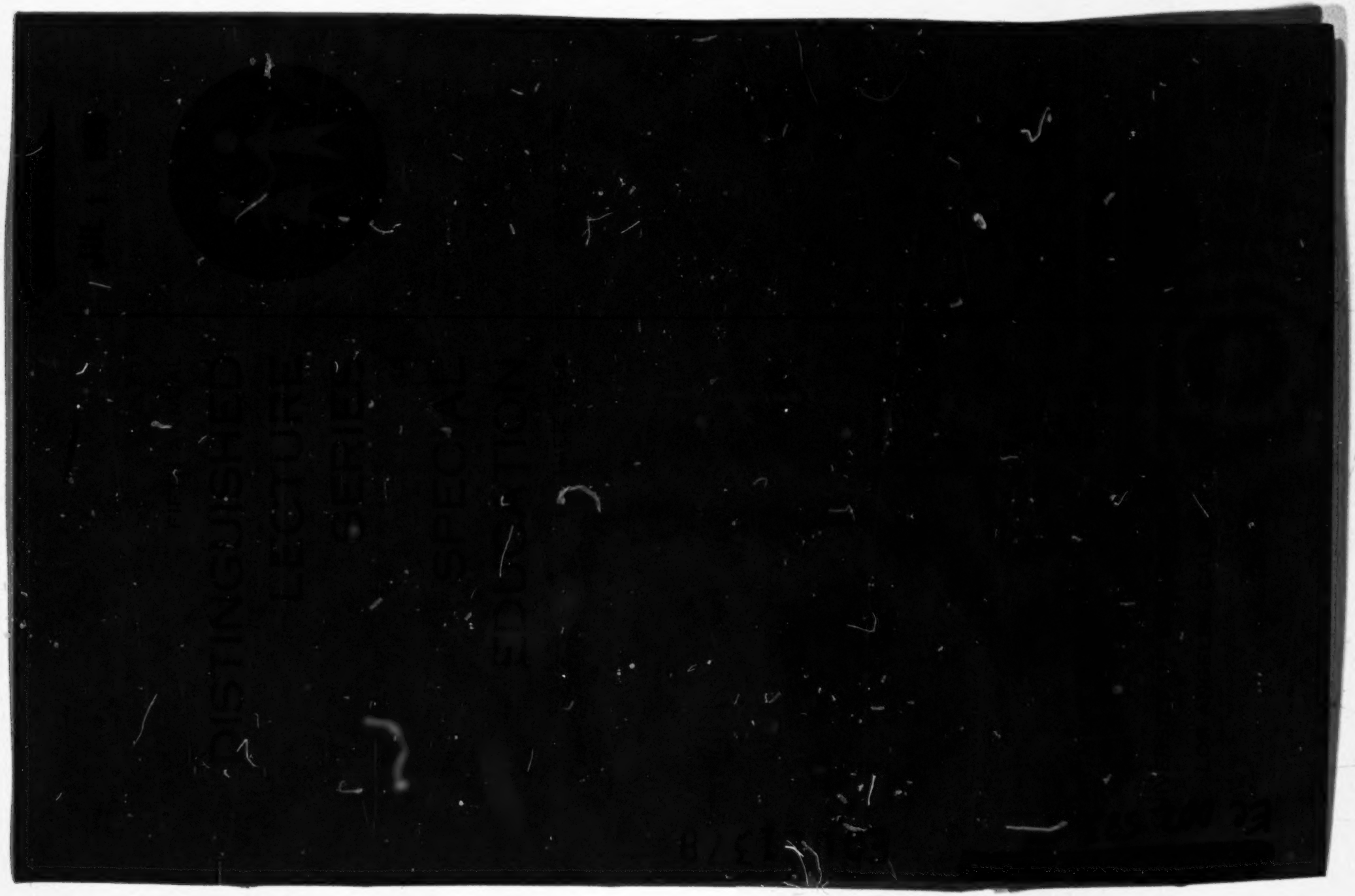
Note- 97p.

EDRS Price MF- $0.50 HC- $3.96

Descriptors- *AURALLY HANDICAPPED, CLASSIFICATION, *DISADVANTAGED YOUTH, *EXCEPTIONAL CHILD EDUCATION, FINGER SPELLING, FOLLOWUP STUDIES, *LANGUAGE, LANGUAGE RESEARCH, MEDICAL EVALUATION, *MENTALLY HANDICAPPED, MONGOLISM, ORAL COMMUNICATION, PRESCHOOL EDUCATION, STANDARDS

Identifiers- Russia

The University of Southern California School of Education invited several persons in the field of special education to lecture at a specially designated summer session series. The following lectures were delivered in the summer of 1966: "Headstart on Headstart: A Thirty Year Evaluation" by Harold M. Skeels, "The Role of Language in the Development of the Preschool Deaf Child" by Boris V. Morkovin, "Language Research in Relationship to the Mentally Retarded and Culturally Deprived" by Melvyn I. Semmel, "Medical Classification of Disabilities for Educational Purposes: A Critique" by Francis E. Lord, "Yesterday was Tuesday: Issues in Language Instruction for the Severely Mentally Retarded" by May V. Seagoe, and "A Profession in a Hurry: The Need for Standards" by Maynard C. Reynolds. Biographical sketches are furnished for each of the above lecturers; and lists of lecturers and their topics are provided for the years 1962 to 1967. Recent doctoral dissertations at the University of Southern California relating to the psychology and education of exception children and youth are cited, and the various graduate programs available at the University are described. (RS)



U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

FIFTH ANNUAL DISTINGUISHED LECTURES IN SPECIAL EDUCATION

SUMMER SESSION 1966

Edited by
James F. Magary
and
Robert B. McIntyre

Published by the
School of Education
University of Southern California
1967

PREFACE

The University of Southern California School of Education has honored distinguished persons in the field of Special Education since 1962 by inviting them to lecture on a topic of their own choosing in a specially designated summer session series. The lecturers frequently discussed an area of research or a service concern which was very central to them professionally and often one that they had not had a chance to present before an audience or in a publication.

A list of these outstanding lecturers between 1962 and 1966 and their topics is provided on page 78. Page 91 lists those distinguished persons selected for the 1967 Summer Session Series. A perusal of these lectures will immediately convince the reader of the range and scope of this series. Physicians, School Administrators, Psychologists, Hospital Superintendents, and Physical Therapists as well as members of other professions which contribute to the educational process of the atypical child are represented. Typically, the persons chosen to give these lectures had made significant contributions to the field of special education long before the current federal involvement in this important area of education, and thus they could speak from a broad experiential base.

The School of Education has for many years trained teachers of the mentally retarded as well as the deaf and hard-of-hearing in conjunction with the John Tracy Clinic which is located adjacent to the USC campus. In 1961, the Washington Boulevard School for Handicapped Children was designated by the Los Angeles Board of Education as the official laboratory school for USC in the field of special education, and the training of teachers for children of the physically impaired was begun. It was fortunate for the School of Education that Sophia T. Salvin was principal of this school as well as an adjunct professor of education at the University. Thus, the liaison with the Washington Boulevard School has been a very cordial and important one.

As I read the 1966 series, I was especially pleased with the quality of the papers. Harold Skeels, whose seminal contribution in the 1930's in terms of environmental modification for the mentally retarded, clearly demonstrated that a more adequate environment for the less-than-able

child could greatly enhance intellectual growth. His follow-up of these samples over a thirty year time period leaves little doubt in the reader's mind of the efficacy of enriched school and home environment for the retarded or deprived child. It was appropriate that Dr. Skeels' paper, *Headstart on Headstart: A Thirty Year Evaluation*, should be the initial contribution in this 1966 series.

This paper was followed by a lecture by USC Emeritus Professor Boris V. Morkovin who discussed the significance of the *Role of Language in the Development of the Preschool Deaf Child.* Dr. Morkovin has been associated with the University of Southern California for over thirty years and was a pioneer in helping to establish the program in speech therapy, special education for the deaf, and the John Tracy Clinic on this campus.

These two papers were followed by a presentation on *Language Research in Relationship to the Mentally Retarded and Culturally Deprived* by Melvyn Semmel of the University of Michigan, a discussion on *Medical Classification of Disabilities for Educational Purposes—A Critique* by Francis E. Lord of California State College at Los Angeles, and a presentation by May V. Seagoe, Associate Dean, School of Education, UCLA entitled *Yesterday Was Tuesday: Issues in Language Instruction for the Severely Mentally Retarded.*

The last paper, *A Profession in a Hurry: The Need for Standards* by Maynard Reynolds, President of the Council for Exceptional Children, and Chairman of Special Education at the University of Minnesota, reviews some of his concerns for a speciality such as this one which has grown at such an amazing rate over the past decade. He poses some questions and issues which could be pondered by all in education today.

The great contributions of these eminent lecturers is very much appreciated.

May 1, 1967

Irving R. Melbo
Dean, School of Education
University of Southern California

TABLE OF CONTENTS

Preface—Dean Irving R. Melbo iii

Introduction—Robert B. McIntyre vii

Headstart on Headstart: A Thirty Year Evaluation—Harold M. Skeels 1

The Role of Language in the Development of the Preschool Deaf Child—Borris V. Morkovin 24

Language Research in Relationship to the Mentally Retarded and Culturally Deprived—Melvyn I. Semmel 31

Medical Classification of Disabilities for Educational Purposes: A Critique—Francis E. Lord 48

Yesterday Was Tuesday: Issues in Language Instruction for the Severly Mentally Retarded—May V. Seagoe 54

A Profession in a Hurry: The Need for Standards—Maynard C. Reynolds 68

Biographical Sketches of Distinguished Lecturers 75

Distinguished Lectures in Special Education, 1962-1966 78

Recent Doctoral Dissertations at the University of Southern California Relating to the Psychology and Education of Exceptional Children and Youth 81

Graduate Study in Special Education at the University of Southern California 86

1967 Distinguished Lecturers 91

INTRODUCTION

With this volume the Department of Exceptional Children reinstitutes the practice of publishing the presentations at the Annual Distinguished Lecturer Series. Dr. Magary initiated this series in 1962 when he served as Coordinator of Special Education at USC. For the past five years the department has sponsored this series of presentations by established leaders in various areas of exceptionality and by those who are creating interest by new and innovative lines of investigation. The quality of the presentations has been such that we have long wished to share them more generally in the field. This year that wish has been fulfilled and we hope you will enjoy this vital and varied intellectual affair as much as we have. Thanks are offered to Lucy Hino, Louise Vann, Sonia Ervo and Nancy Richards for editorial assistance. Special Kudos to Melissa Mey Thaler for the cover design, to Gay Taylor, and Barbara Magill who assisted in the proof reading.

Robert B. McIntyre
Chairman, Department of
Exceptional Children

Headstart on Headstart: A Thirty Year Evaluation

HAROLD M. SKEELS

If intelligence is static, a fixed entity, and relatively unmodifiable by changes in environmental impact, then changes in family constellation, living conditions, and amount and kind of education can be expected to have little influence on the mental level of individuals. On the other hand, if intelligence shows change in relation to shifts in environmental impact, then our concept must include modifiability, and the implications for parents, educators, and child welfare workers become more challenging.

This latter concept was postulated by Alfred Binet. In his significant book entitled, *Les Idees Modernes Sur Les Enfants*, published in 1909, Binet devotes an enlightening chapter to the topic, INTELLIGENCE: ITS MEASUREMENT AND EDUCATION. He is surprised and concerned at the prejudice against the concept of modifiability of intelligence. To quote: "Some recent philosophers appear to have given their moral support to the deplorable verdict that the intelligence of an individual is a fixed quantity, a quantity which cannot be augmented. We must protest and act against this brutal pessimism. We shall endeavor to show that it has no foundation whatsoever."

Binet goes on to cite observations and situations relating to the teaching of (functionally) subnormal children, summarizing as follows: "A child's mind is like a field for which an expert farmer has advised a change in the method of cultivating, with the result that in place of desert land, we now have a harvest. It is in this particular sense, the only one which is significant, that we say that the intelligence of children may be increased. One increases that which constitutes the intelligence of a school child; namely the capacity to learn, to improve with instruction."

In the present article an attempt will be made to summarize a series of research studies carried on over a period of one year by several staff members of the Iowa Child Welfare Research Station, State University

of Iowa, on the mental development of foster children in relation to differential environmental impact, to report our transitional feelings and thinking, and to discuss the implications of the studies. In so doing we will spare the reader from any extended statistical or technical presentation, inasmuch as the several studies have been previously reported in the scientific literature.

None of the studies was initiated on a basis of "arm chair" hypotheses, but rather as an outgrowth of clinical service projects. With the initiation of psychological services in the State Orphanage in 1932, we were concerned with the policies relating to early placement of infants in adoptive homes. The superintendent of the Orphanage, a lay person, felt very strongly the importance of placement being as early as possible. Suitability and readiness for placement were based on two considerations: whether or not the infant had the right number of fingers and toes—as determined by the pediatrician's examination; and if, in addition, the infant smiled at him—a casual subjective observation of function. Social history information was not considered as having value in terms of placement suitability. Therefore, an infant from a feebleminded mother was as apt to be placed as one whose mother was a college graduate.

Considering the accepted concepts of mental growth back in 1932, our concerns over such a placement policy were great. An evaluation of social histories on infants already placed augmented this concern. Since legal adoption, according to state rules, could not be consummated until at least one year after placement, our one immediate recourse seemed to be to make a psychological examination on each placed infant prior to completion of adoption. Accordingly, each home was visited near the end of the placement year and an individual psychological examination was made by trained and experienced psychologists.

We can never forget our concern and surprise on the first twenty-five cases thus examined. In each case, the social history had been carefully read and evaluated prior to the home visit. In many instances, we arrived at the home all prepared to outline a developmental program for a dull or retarded child. In some instances, reported feeblemindedness in one or both true parents, delinquency, and institutionalization, caused us to anticipate the need of removing a mentally defective child requiring continued institutional care.

It was indeed a pleasant surprise to find, after examining and observing child after child, not only normal mental development, but above average and superior intelligence as measured on the intelligence test and corroborated by observations of behavior and information furnished by

the adopting parents. In no instance did it seem necessary to consider plans for a dull or defective child.

With these initial findings on the first twenty-five children, we could not feel that in each case nature had been so kind as to select all of the so-called "good inherited qualities" and eliminate all of the "bad." Rather, it appeared that there must be other factors operating which would cause us to re-evaluate existing concepts.

The need for extended and continuous research was obvious. Also, by virtue of such placement procedures in the State agency, here was a "gold mine" for such studies. Here was a setting in which children were placed in normal adoptive homes, who under more refined and accepted placement procedures, would never have been put into such homes. Rather, they would have been placed in paid boarding homes and institutions for extended observation.

This, therefore, was the setting in which a series of extended research studies was carried on over a period of thirty years, by several of us then on the staff of the Iowa Child Welfare Research Station.

Let us first look at the study of the mental development of children in adoptive homes—as evidenced by the first, or adoption, examination. Included were 147 children under six months of age, all of whom had been placed in adoptive homes with the average age at time of placement being three months. Here we wanted a group of children who had experienced only the environment of the permanent adoptive home from early infancy.

The true parents of these children represented a selection downward on a basis of social factors such as education, occupation, income, living conditions, etc. There were higher than average frequencies of individuals on relief, institutionalization—including penal, mental, and defective—as well as repeated court citations.

In contrast, the adoptive parents represented a definite selection upward. Approved adoptive homes gave evidence of culture, refinement, education, and an intellectual and emotional understanding of the needs of children. In each case the child was a wanted child, sure of receiving an abundance of love and affection.

Results of these first examinations of 147 adoptive children, examined at an average age of 24 months, indicated that the group was above average in intelligence, the mean IQ being 115. Ninety-six per cent were of normal or above intelligence. Only four per cent were below average and none below the dull-normal level.

That was the beginning of the adopted child studies. We will come back to it soon.

A second study evolved out of some rather casual observations of children in the Orphanage. One day my colleague and I were jesting about guessing IQ's from the ages of the children. If one had examined a family of children and would read off the obtained IQ's, the other—not having seen the children—could guess the relative ages of the children with a fair degree of accuracy. *It appeared that when families were committed, the younger members showed a higher level of intelligence than the older ones.* The frequency of such an occurrence suggested the importance of a study bearing on this question. Hence the study of the mental development of children from underprivileged homes.

Four hundred and seven children from 132 homes were included in this. These children also came from homes representing a selection downward on all indices relating to socio-cultural status. In fact, these children represented an even lower selection. After all, things have to be pretty bad before a court will step in and pronounce a judgment that the parents are unfit to have custody of their own children. The children ranged in age at the time of examination from one to fourteen years. Since the group included only those coming directly from their own homes to the Orphanage, ages represented the length of time that they had been exposed to an underprivileged home impact.

The level of intelligence for the entire group of 407 children was somewhat below average, the mean IQ being 88.5. There was a definite trend for level of intelligence to decrease with an increase in age. Children from one to seven years of age were of low average intelligence, with a mean IQ of 96; children eight to eleven years were of dull normal intelligence, mean IQ 87; and children twelve to fourteen years of age were on an average of borderline intelligence, that is, with a mean IQ of 78. In other words, a child exposed to an inadequate home for twelve or more years could be expected to reach a level of intelligence classifiable as "near feeblemindedness."

At this stage, and in the light of the two foregoing studies, two hypotheses could be postulated relative to mental growth. First, that children from so-called "poor stock," whose true parents fall in the lower sociocultural levels, under an enriched environment such as the adoptive homes, start out well, showing a mushroom or "hot house" type of mental growth, but as age increases this rate will decline, with a subsequent mental level which is comparable to that of their true parents. Second, that children born at all socio-cultural levels, and in the absence of overt pathology, have sound biological inheritance within a normal range, but later mental growth is stunted by lack of opportunities in inadequate homes.

To test these hypotheses further, we made a study of the younger children from the underprivileged home group, *following placement in above average adoptive homes.* Sixty-five preschool age children examined following removal from their own underprivileged homes, at an average age of 3.5 years, were shortly placed in adoptive homes far superior to their own homes. The average IQ before placement was 98, and on second examination after one year in an adoptive home, was 104-showing an approximate gain of six points. Additional follow-up tests were available on twenty-four of these children two or more years following placement which showed an average of ten points gain in IQ. Thus, we see that the rate of mental growth of these younger children increased with age under adoptive home conditions in contrast to their own brothers and sisters of comparable ages but who had continued to live that extra amount of time in their own less adequate homes. That is, those remaining went down in IQ.

The next study which we shall consider grew out of a clinical surprise. Two little girls were admitted to the Orphanage nursery, one *thirteen months* of age and one *sixteen months.* There world had not included loving mother care. The mother was an inmate of a state hospital with a diagnosis of psychosis with mental deficiency. There was a lineage of inadequacies in both histories.

These youngsters were pitiful little creatures, of the runny-nose variety, emaciated, undersized and lacking in muscular tonus. Both children were full term normal delivery with no indications of birth injury or glandular dysfunction. The pediatrician's examination was essentially negative with no indications of physiological or organic defects.

Our psychological examinations showed an intellectual level comparable to that for low grade mental defectives, with development being at *six and seven months* respectively. They were 13 and 16 months of age. This was further confirmed by our observations of their behavior in the nursery, and by reports of the superintendent of nurses, and by the pediatrician's examination. Accordingly, they were considered unplaceable, and transfer to a school for feebleminded was recommended with a high degree of confidence. We quote from the recommendations for transfer as follows: "C.D.: Diagnosis of mental ability: Mental deficiency of imbecile level, which will probabl continue with an increase in age. Prognosis: Poor. With this deficiency in mental development, C.D. will be unable to make her way outside the care and protection offered by an institution for feebleminded children." Recommendations on the second child were similar. Accordingly, these children were transferred to the school for feebleminded shortly thereafter.

It sometimes happens that one's sins catch up with him. This was the case with the author by virtue of his position as Director of Psychological Services in the various state institutions. Six months after transfer, we were visiting the wards at the school for feebleminded in connection with regular duties, and noticed two little girls. We scarely recognized them at first, and were surprised to see what appeared to be remarkable development. They seemed to have a feeling of security, of being loved and wanted, of amounting to something. Accordingly, we gave them psychological examinations and found that they were approaching normal mental development for their age. Twelve months later we re-examined them, and then again when they were forty and forty-three months old. These later examinations gave unmistakable evidence of mental development being well within the normal range for their ages.

What had happened? How could this be? We still felt that our initial evaluations gave a true picture of functional capacity at that time. We were equally confident that later appraisals showed normal mental growth.

Our attention, therefore, turned to considerations of what life might have held for these children during this interim period. They had been placed in one of the wards of older brighter girls, ranging in age from eighteen to fifty years and in mental age from five to nine years. In each case one or more of the older girls had "adopted" this baby with others of the girls serving as fond adoring aunts. Attendants and nurses also gave of their time and affection. These children were essentially the only preschool children on the ward, other than a few hopeless bed patients with physiological defects. By contrast, these children were "wonderful." The attendants would take these two children with them on their days off, giving them car rides and taking them downtown to the store. Toys, picture books, and play materials were purchased in great abundance by these admiring adults. The older girls would buy print cloth with their own spending money and then fondly make pretty little dresses for them. The girls would show the children picture books and play with them during most of their waking hours. Here then was a "home" setting charged with mother love and rich in experiences of an interesting and wholesome nature and geared to their level of development.

We recognized that as the children got older their developmental needs could be met less adequately in this type of a setting. Furthermore, they were now normal, and the need for institutionalization no longer existed. Accordingly, they were transferred back to the Orphanage and shortly thereafter placed in adoptive homes.

The problem then facing us was what to do with nursery age children coming to the Orphanage and showing functional mental retardation. At that stage they could scarcely be placed directly in adoptive homes, for we had no assurance that subsequent development would consistently be accelerated. In the state program, we had no recourse to the use of paid boarding or foster homes for developmental purposes. *The Law at that time limited care to that of free home or institution.* Our experiences had told us that to hold babies for development, in a large orphanage nursery, mean holding them for death, mental deficiency, or psychopathology. In spite of excellent medical care and available nutritious formulas, babies just don't develop without individualized loving care. With no criticism of the nursing staff, and considering the large number of babies, attention of necessity, was pretty much limited to physical care—bathing, changing, and at least a start on nutrition by placement of the nipple between the lips. Is it any wonder that the child would literally and figuratively turn his head to the wall and say, "What's the use?" Note that this was all before the "deprival" issue came into the literature.

A fantastic idea struck us (and this is the essence of the third study), and we went to the Chairman of the Iowa Board of Control of State Institutions with the following question: How about transferring mentally retarded children in the Orphanage nursery, one to two years of age, to the institution for feebleminded in order to make them normal? He rightly thought we were crazy, but being long suffering and also having grave concern as to the welfare of these children, he went along with the idea. This then was the birth of the "Study of the Effect of Differential Stimulation on Mentally Retarded Children." This is the first known "Headstart" program.

The experimental group included *thirteen* children, ranging in age from seven months to thirty-six months with a mean age of nineteen months at time of transfer. These children were considered as "house guests" at the school for feebleminded. The length of the experimental period or "visit" was on a basis of subsequent rate of development.

The average IQ of these children at time of transfer was 64, *the range being from 35 to 89.* The range of the experimental period was from six months to fifty-two months *with the average being nineteen months.* Psychological evaluations of development were made from time to time during this period. On the last examinations at the close of the experimental period, the average IQ was 92, representing an average gain of 28 points. Every child showed a gain, the range being from 7 to 58 points. Three children made gains of 45 points or more, and all but two children gained more than 15 points.

The contrast group included twelve children in the Orphanage nursery of comparable ages to the experimental children, but who *on admission were well within the range of normal intelligence.* The mean chronological age at time of first examination was 17 months with a range from 12 months to 22 months. The average IQ at this time was 87. (Remember, the average IQ was only 64 for the experimental group). For various reasons these children had not been placed in adoptive homes, but rather were exposed to the Orphanage setting for a period of time comparable to that of the experimental group children in the "house guest" status. The end test, or evaluation, on the contrast children at an average age of 47 months, represented a time interval of thirty months following the first examination. The mean IQ on this last test was 61 showing an average loss of 26 points. With the exception of one child who gained two points, all children showed losses, the range being from —8 points to —45 points. Ten of the twelve children lost 15 or more points in IQ.

While numbers of cases are small in these groups, the remarkable contrast between the environment of the experimental transfer group and the contrast group, and the associated marked reversals in mental growth trends make the findings highly significant. Such a radical shift in environment as was experienced by each of the children in the experimental group would scarcely occur in an unselected sampling of children in their own home more than two or three times in a thousand cases.

A follow-up study on these two groups of children is very revealing. Eleven of the thirteen children in the experimental group were subsequently placed in adoptive homes, one remained in the school for feebleminded and one was returned to the Orphanage but continued retardation made adoptive placement inadvisable.

The eleven children placed in adoptive homes were re-examined approximately two and one-half years following the close of the experimental period. The mean IQ was 101.4 with no child having an IQ below 90. Changes in IQ following the end of the experimental period were from +16 points to —5 points. With the exception of one child, change was in the direction of increase in IQ. The greatest gain (16 points) was made by a child placed in a superior adoptive home, whereas the child showing a loss was in a home considered far below the average of the group.

Of the twelve contrast children, only one child was placed in an adoptive home, and that a marginal one. Six at later ages were transferred to the school for feebleminded, not as "house guests" but as residents, inasmuch as deterioration was so marked that it seemed improbable that placement outside an institution could be attained.

As the program continued, our concern for the Orphanage children included those of preschool ages. Children admitted between the ages of two and one-half to five and one-half years of age, or those in the Hospital Nursery reaching two and one-half years of age were placed in the two preschool cottages, one for girls and one for boys. It seemed to us that other than reasonably adequate physical and medical care, little was done to enrich the life experiences of the children at these ages. The elementary school program only went down as far as the kindergarten level.

These cottages were of red brick two-story construction, with total floor space equivalent to that of an average sized private dwelling. Upstairs there was one large dormitory with an adjacent "Sunday" closet containing the childrens' "good" clothes. Next to the dormitory was the matron's room. There were no toilet facilities on the upstairs floor.

On the ground floor at the front of the building was the parlor. This was functionally interpreted in the truest New England sense. In other words, it was a room only to be entered on special occasions when there were guests. The children seldom were allowed to enter this room and never in numbers. If the Superintendent visited the cottage or prospective adoptive parents, one specific child might be brought in to meet them. All furniture was strictly for adult usage. Next was a small utility room back of which was a larger room and off of this an enclosed sunroom. The children were essentially limited to these last two rooms. Then, of course, there was a dressing room and bathroom facilities.

Each cottage housed from thirty to forty preschool age children. Only one matron was in charge of each cottage, assisted by four or five reluctant older girls from the Orphanage. These older girls resented being detailed to look after the children in the preschool cottages and would have much preferred being outside playing rather than having to look after "those brats." The matron's duties were overwhelming, including the mending of clothing for all the children, bathing and toilet activities and general physical care. The children did not have their meals in their own cottage but went to a main dining room which accommodated approximately 500 children. Under such circumstances, it was impossible to individualize the children. The children were dressed on the basis of what clothes were available in terms of size and those clothes which had come back from the laundry. In other words, one week Johnny might wear a given set of clothes and the next week Robert might have the same. There was nothing that a child could call his own except perhaps his toothbrush, and under these circumstances we frequently had our doubts as to whether that was his own.

When the children were outside of the cottage, there was little opportunity for free play and the use of large play equipment. By far the greater amount of outside time was spent marching in line on the walks of the campus. If a child saw a pretty butterfly and darted out of line to get it, this was a cardinal offense and duly punished. The greater portion of the waking hours was spent sitting elbow to elbow on benches against the wall in the sunroom with an older girl to literally and figuratively stand over them with a big stick. Toys and play materials scarcely existed. These children, therefore, lived a pretty sordid life, and emotionally were starved for love and affection. If an adult visitor came in, it was a real treat simply to be able to touch the hem of his coat or to grasp a finger of his hand. To be actually picked up and loved a little was an overwhelming treat.

Several of us on the staff at the Child Welfare Station were interested in the possibility of introducing a preschool program for these children. This interest was also shared by the Superintendent of the Orphanage. Our interest included both a desire to do something in meeting the needs of these children and also in making use of this setting for further research studies on the growth and development of preschool children living in underprivileged circumstances. For years, Dr. Beth Wellman had been responsible for a series of research studies on children in attendance at the University Preschool Laboratories. However, these studies were limited to children from superior homes and involved all of the variables relating to the children living in individual homes. In the Orphanage setting, such home variables would be limited to two "homes", namely the two cottages for preschool children. The Board of Control agreed to build on the Orphanage campus a preschool building, and the Child Welfare Station was to furnish the trained teachers during this three-year period with the privilege of carrying on rather extensive research studies relating to the effect of a preschool educational program functioning in such a setting. The building included an ample play yard enclosed by a picket fence. This outlay gave the impression of an oasis in the desert. Adequate play materials and play equipment were purchased both for inside and outside activities.

A control group of children were matched on a large number of variables, including chronological age, intelligence quotient, mental age, sex, nutritional status, and physical condition as evaluated by the pediatricians examination and length of residence in the Orphanage. Thus, one group would attend preschool and the other would not. Other than the hours spent in preschool by the experimental group, both groups lived

in the same two cottages under comparable conditions. It was indeed heartrending to be walking along the walks and have a little youngster run up to you and ask, "Why can't I attend preschool?" Before the experimental group started to preschool, both groups were given all manner of tests and examinations and then periodically thereafter.

This, then, was the other "first headstart," back in the 1930's. When the preschool building was completed and furnished, a tea was held the day prior to the actual entrance of the children. All of the matrons and staff members at the Orphanage were invited. We wanted them to have a feeling of sharing in this project. They were much impressed with the preschool layout and quite interested in the project. However, we were repeatedly warned that these children were not like other children and that they could not be handled in the same way.

The next morning the children arrived for their first day in preschool, approximately fifteen of them. At first they were stunned by the layout, but in a matter of minutes they were dashing all over the place, and a status of bedlam and chaos reigned. Children grabbed whole armfuls of toys, rushing madly about the place and accosting each other for possession. There were many conflicts, and toys were thrown around in wild fashion. Many times they were deliberately thrown down the cement steps to the basement storeroom. The teachers were totally unprepared to meet such a situation, and practically lost their minds. It was with a great sigh of relief that the children were finally herded out and back to the cottages, somewhat earlier in the day than had been planned. An extensive council of war was held shortly thereafter, resulting in an emergency telephone call being placed to the Child Welfare Research Station requesting much additional teaching assistance. It was arranged that Research Assistants in Graduate Training be sent down to the Orphanage in relays, one group staying for a week and then being replaced by another; also, it was decided that for awhile the numbers of children initially in attendance would have to be greatly reduced.

On the next day a total of five children were permitted to attend preschool, and there were seven or eight teachers to look after them. This sort of ratio was maintained for several days. It was during this period that we had great concern for fear the Board of Control might visit the Orphanage to see how the project was getting on. Had that happened, we fear that the project would have been rather short-lived, as the question would have been raised as to what manner of school this was wherein therefore more teachers than pupils.

During this early period, we began to wonder whether or not the

admonitions which we had been given that these children were not like other children might not be true and were seriously questioning whether or not these children could become like other children. Before positive learning could take place, several other things had to happen. There had to be a great deal of unlearning.

In keeping with policies of all good preschools, orange juice or tomato juice was served at mid-morning. It was desired that the children informally and leisurely come up and get their glass of juice, wipe their mouth with a colored tissue napkin, and then deposit the soiled napkin in the waste basket. That was not the way it turned out. The children rushed madly for the orange juice. They were delighted with the colored paper napkins but refused to throw them in the waste basket and went around most of the day clutching them closely and saying, "Mine, mine." In this setting, we wanted to individualize each child as much as possible. Accordingly, some such provision had been made in designing the building. For example, in the coat room, each child had an individual locker with a specific small picture identified with his name. Also, under each locker was a drawer for him to keep his own prized possessions. We had assured the children that things would be safe there. We were wrong. They were not safe there for some time to come.

The meaning and usage of play materials to these children were not what might normally be expected. A picture book to many of these children simply meant something to produce sound effects by turning the pages, which could be augmented by tearing and destroying pages. The fact that these pages contained interesting and pleasant vicarious experiences affording relaxed enjoyment was scarcely comprehended. Thus, the many problems confronting us can be appreciated. With fewer children and the larger teaching staff, it was possible to bring order out of chaos. Being loved and amounting to something gave new life and drive. With some freedom and choice they learned how to get individual pleasure and at the same time respect group needs and rights. Sharing and taking turns became a part of their life experience.

After two or three weeks with these five children it was possible to gradually introduce new children into the setting, one or two at a time. Also, it was interesting and genuinely satisfying to see the children who had had some experience in the preschool setting helping the new ones to adjust to the program. This in turn gave them a feeling of accomplishment, and after several weeks, it was possible to carry on the program with approximately twenty children, as had been planned, and four regular teachers.

Another interesting sidelight should be mentioned. With the introduction of the preschool an attempt was made to increase the children's ability for self-help. For example, in the toilet situation, they were taught to wash their faces and hands and to become more reliant in looking after their toilet needs. This initially necessitated a radical change in clothing. Prior to the introduction of the preschool, the children had worn long underwear, coveralls, long black stockings and black shoes, as it had earlier been felt that provision of snowsuits would be prohibitive in cost. Under these circumstances, self-help at the toilet was rather a physical impossibility at these ages and had been discouraged. Entirely new clothing was therefore provided, in keeping with that of preschool children in their own homes, and along with this they were encouraged to look after their own toilet needs. The children were quite thrilled with this and proud of their accomplishments. For a while this constituted somewhat of a problem. Some of the little boys who had learned to go to the toilet by themselves, had to demonstrate this achievement to others out on the campus, and, in short order, a number of the matrons came to us in great concern fearing that the children were becoming immoral and wondering just what the preschool was doing to these children. It took a number of conferences and informal reassuring sessions to point out to the well-meaning adults just what this meant. Here was a natural pride in a new achievement, and it was quite understandable that the children would want to demonstrate this to others. We gave reassurance that in keeping with the customs of our society, children were being taught to go to the toilet and urged the matrons to refrain from calling the children bad and immoral. We urged them to treat the situation in a matter-of-fact sort of way and said that, given a little time, the problem would disappear. This, of course, proved to be the case in spite of some anxious moments.

Our findings following the three-year research period, were unexpected. If we had any preconceived ideas, it was to the effect that probably the preschool group would show some increase in intelligence and that the control group would remain relatively constant. However, we were in for some definite surprises. It was true that the experimental group did show *some slight gains* in intelligence-on an average, approximately five points increase in IQ. Children at the lower levels of intelligence made the greatest gain, and a few at the highest levels showed slight losses. ***In other words, the preschool setting had the effect of offsetting somewhat the deadening effects of cottage life.*** On various other measures, there was marked improvement. As might be expected, social

competence and self-help showed remarkable gains. Also, there were marked increases in language and vocabulary development. Our great surprise came in connection with the control group. Instead of level of intelligence being constant, the average IQ of the group declined approximately five points. As has been previously mentioned, some of the children were in the Orphanage from two to three years, and it was indeed a surprise to us to find that children initially of normal intelligence exposed to such conditions for a period of two or three years could deteriorate to a level classifiable as functionally feebleminded. Eight children formerly included in this study were subsequently transferred to the school for feebleminded. Such transfer was not made for developmental purposes, but on the basis of age and retardation, it was felt that they would need continuous institutionalization. Six of these children came from the control group and only two from the preschool group, not withstanding the fact that the preschool and control groups were originally equated on a basis of intelligence. Also, the two transferred from the preschool group had been in attendance less than one hundred days, which was the point at which differences of intelligence began to emerge.

And now, let us again turn our attention to the children placed in adoptive homes in infancy. Three groups of the original group of 147 were studied. Group One was made up of children wherein the following requirements could be met: 1) there be an intelligence test on the mother and that she have an IQ of 75 or less; 2) the child be placed in a permanent adoptive home in infancy; and 3) we have a measure of intelligence on the child following placement. Concerning fathers in this group, we let the chips fall where they would. In other words, there was no restriction as to intelligence level of fathers; however, actually evaluation of educational and occupational status showed them to be heavily weighted on the lower end of the distribution. A total of 87 children met this requirement. The average intelligence quotient of the mothers was 63. The mean IQ of this group of 87 children was 105.

Group Two was made up of children wherein each and every true father represented a selection downward in terms of socio-cultural factors. This group included only those children whose biological fathers were unskilled or slightly skilled laborers and who had been placed in permanent adoptive homes in infancy. There were 111 children who met these requirements and were included in Group Two. The average level of intelligence of these children was represented by a mean IQ of 110.

The children in Group Three represented the overlap between Group One and Group Two. In other words, for each child in this group there

was adequate history and information on both the biological mother and father. The father must have been an unskilled or semi-skilled laborer, and the mother must have had an intelligence test with a result showing an IQ of 75 or less, and further, the child must have been placed in a permanent adoptive home in infancy. A total of 31 children met these requirements. When we think back to those days, we recognize that in most accepted and approved adoption policies of that time, seldom if ever would such a child have had the advantages of an adoptive home, but rather would have been placed in an institution or, at best, in a paid foster home for extended observational care. This, then, becomes a very sizeable group. The average IQ for these children was 104.

Therefore, it can reasonably be concluded that children of mothers with low intelligence or from fathers with low occupational status, or from a combination of both, placed in adoptive homes at infancy, obtain a mental level which equals or exceeds that of the population as a whole. The frequency with which cases showing mental retardation appear is no greater than might be expected from a random sampling of the population as a whole, and the frequency with which cases having superior intelligence appears is somewhat greater than might be expected from a random sampling.

Dr. Skodak and I did what we thought was "A Final Follow-up Study of 100 Adopted Children." A review of the scientific literature will reveal that scarcely, if ever, has a study been reported wherein the same children placed in adoptive homes in infancy have been studied over a continuum of time and up to and including adolescence. It was our feeling, therefore, that in these various studies, a longitudinal study of children in adoptive homes from infancy to adolescence was a must. This study, hence, covers a period of time from 1932 through 1946. From the 147 children reported in our first study, all placed in adoptive homes under six months of age (and at an average age of three months), it was possible to study 100 of them during this fifteen-year period. In most instances of course, adoption had been completed following the first examination and arrangements for subsequent visits were made on a gentlemen's-agreement basis. Also, it should be stated that these years included the period of World War II when there was much moving about the country. It, therefore, seemed quite significant that it was possible to study the same 100 children over such a long period of time. In the scientific article reporting this study, we have given careful evaluation to the factors both relating to the 100 children which were included, and to the others, which for one reason or another were lost to the study;

and it can be stated that the final group of 100 can be taken as representative of the larger group.

In long-time research studies there are many problems to be faced. One is that of continuity of the same investigating personnel. In this we were very fortunate, as all examinations were made by Dr. Marie Skodak and myself. Dr. Skodak left the Child Welfare Research Station in 1940, and subsequently became Director of the Flint Guidance Center of Flint, Michigan. However, it was possible to get her back to Iowa in 1941, and in 1946, for an extended period of time to carry on follow-up examinations.

These 100 children were first examined at an average age of two years and two months, at which time the mean IQ was 107. The second examination was made when the children were four years and three months of age on an average, and at that time the mean IQ was 112. The third examination was made when the children were at an average age of seven years. At that time the mean IQ was 115. It had been planned to make a fourth examination when the children were around nine or ten years of age; however, that came during World War II when some of us were on active military duty, and there was a problem of gas rationing, lack of transportation facilities and reduced staffs. So, an evaluation could not be made at that time. However, the last and final round was made in 1946, and at that time the children represented an average age of thirteen years, six months.

Both the 1916 and 1937 revisions of the Stanford-Binet were given, except for not repeating common items. Where a given item was of somewhat greater difficulty in one standardization than in the other, the more difficult presentation was administered first. *Using the 1916 revision, the average IQ of these thirteen year olds was 107. On the 1937 revision, the mean IQ was 117.* Without considering the clinical implications of the differences between the two standardizations, for purposes of this study it will be seen that both measures indicate a level of intelligence above average. Therefore, it can be concluded on the basis of this longitudinal study that the intellectual level of the children has remained consistently higher than would have been predicted from the intellectual, educational, or socio-economic level of the true parents and is equal to or surpasses the mental level of own children in environments similar to those which have been provided by the adoptive parents.

From time to time, the investigators at the Iowa Child Welfare Research Station have been accused of feeling that heredity doesn't count and that environment is everything. This is definitely not the case. We

have at all times been aware of the importance of good sound biological heredity. However, these studies do point up the fact that with a given endowment and constitution the range of modifiability in development is much greater than had previously been assumed. For example, a given infant of sound constitution can either become a graduate of a university and a competent self-supporting citizen, or can become an incompetent, retarded, inadequate, individual requiring institutional care, depending upon what happens to him from infancy to adulthood.

We were able to make a follow-up in the early 1960's of the 13 children involved in the so-called institutional headstart program where babies were reared in the company of fond mentally retarded girls, and of the 12 in the contrast group. The remainder of these remarks are excerpts from a report of the present status of those groups, to be published soon as a Monograph of the Society for Research in Child Development.

Of the 13 children in the experimental group, all are self-supporting, and none are wards of any institutions—public or private. Two of the children in the experimental group, one boy (case 1) and one girl (case 6), earlier spent some time in a state correctional school; (however, both have since married). Of the 24 children in the second generation 14 are boys and 10 are girls, with a mean of 2.7 and a median of three children per family.

In the contrast group of 12 children, at the time of the interviews, five had continued to be wards of state institutions, four at a state institution for the retarded (cases 14, 18, 21, and 25) and one (case 20) in a state hospital for the mentally ill. A sixth child (case 15), committed in infancy to the state orphanage, was later transferred to a state institution for the mentally retarded where she resided until her death at 15 years of age. Of the four who were wards of the state institution for the mentally retarded, two were in residence at the institution (cases 14 and 18), one was out on trial visit with his grandmother (case 25) and another (case 21) on a protected vocational training placement.

Out of four females in the contrast group, two were sterilized in late adolescence to preclude the possibility of procreation in the event that they were placed out on work placements at older ages.

Of the 12 children in the contrast group, only two individuals (males) have married, and one of them is now divorced. This individual (case 22) has one child, a boy, who is living with the mother. The other (case 19) has four children and maintains a nice home, which he owns. His is the only instance of home ownership among the contrast children. The

divorced man rents a modest apartment, and all others—not institutionalized—live in rented rooms in rooming houses, or their equivalent.

There are marked differences between the two groups in educational attainment. School grades completed for individual cases in the experimental group, and their spouses, and for individual cases in the contrast group are shown in Table I. Means and medians are shown in Table II.

In the experimental group, the average grade completed (all thirteen cases) is 11.68, with a median at grade 12. Excluding the two cases not placed in adoptive homes (cases 2 and 9), the mean is 12.8 and the median 12. One child—a male—has a B.A. degree from a state university; another—male—graduated from a business college, and three of the girls (cases 3, 4, and 13) have from one semester to two and a half years of college education.

Education of their spouses is comparable to that of subjects in the experimental groups. The average grade completed was 11.6 with a median at 12.0 for the eleven married cases. Excluding the spouse of the one child in the experimental group who was never placed in an adoptive home (case 2), who had only a sixth grade education, the mean for spouses was 12.2 and the median 12.0.

TABLE I

EDUCATION OF INDIVIDUAL CASES

Experimental Group			Spouses		Contrast Group		
Case No.	Sex	Grade Completed			Case No.	Sex	Grade Completed
1	M	11	F	12	14	F	2
2	F	5	M	6	15	F	2
3	F	14.5	M	12	16	F	4
4	F	14.5	M	12	17	M	3.4
5	F	10	M	9	18	M	0
6	F	11.5	M	12	19	M	12.5
7	F	12	M	14	20	M	8
8	F	12	M	12	21	M	2
9	F	6	—		22	M	3
10	M	14.3	F	9	23	F	6
11	M	16.3	F	16	24	M	2
12	F	12	—		25	M	2.5
13	F	12.7	M	14			

TABLE II

MEAN AND MEDIAN EXPERIMENTAL AND CONTRAST GROUPS COMPARISONS OF EDUCATION FOR HIGHEST GRADE COMPLETION

Measure	Experimental Group (N = 13)	Their Spouses (N = 11)	Contrast Group (N = 12)
Mean	11.68	11.60	3.96
Median	12.00	12.00	2.75

Educational levels of the subjects in the contrast group are o fa much lower order than those of the experimental group. Based on the best information available, the average grade completed was 3.95 with a median at 2.75 (Table II). Using the t test, the difference between the means of the experimental and contrast groups was statistically significant, $P<.001$.

Only one subject in the contrast group had an education beyond the eighth grade.

Marked differences are shown between the two groups. In the experimental group, the three male subjects are respectively a vocational counselor, a real estate sales manager, and a staff sergeant in the Air Force. Vocational achievements of the females in the experimental group cannot be compared directly with those of males for two reasons: there are not equal opportunities for advancement, and early marriage terminates vocational advancement or materially changes the pattern. In the present study, eight of the ten girls have married, and two of these married shortly after leaving school without any previous employment.

Of those who have been employed, one taught elementary school grades, one was a registered nurse, one was a licensed practical nurse, one took a beauty course, passed State Board examinations and served in that capacity for a while, one was a clerk in an office, another—after graduation from high school—took the examinations and was accepted as a stewardess for an airline, but married instead. Following her marriage, for a short time she was a dining room hostess in a motel. Two were domestics in private homes. The latter two were those who never were placed in adoptive homes.

In the contrast group, four individuals were residents of state institutions and unable to hold down jobs in a community. Work accomplishments are limited to unskilled tasks assigned to patients on a ward. Of the seven that were employed and living in communities, one, a male, was still a ward of an institution for the mentally retarded, but out on

a vocational training assignment. He washes dishes in a nursing home, earns $60 a month and board and room.* Two others, one male and one female, previously wards of a state institution for the mentally retarded, have been discharged from State supervision, and are dishwashers in small restaurants. One of the girls remained in the orphanage from infancy to 17 years, was then returned to her mother and works in a cafeteria. Her duties—folding napkins around silverware. On paydays her mother calls for her check and deposits it in the bank for her.

One of the boys has been in and out of the institution for the mentally retarded for many years. When "out" he lives with his grandmother. He occasionally mows a neighbor's lawn, and brings the groceries home to his grandmother. (Subsequent to completing the interviews for this study, it has been learned that he now is domiciled at one of the county homes).

Another one of the boys is a "floater," his travels having taken him from coast to coast. His vocational activities have included picking chickens in a produce house, washing dishes in a hospital kitchen, and recently doing the heavy packing for shipment in a stationery company. The investigator made one trip to Iowa and two to the West Coast before locating him.

Still another one of the boys is an employee in the institution for the mentally retarded, where he was a patient for many years. Upon reaching adulthood, it was felt that his retardation was not sufficient to justify his being kept as a resident. Placement in a community was attempted, but this failed completely. He was then placed on the employees' payroll but continued to live in a patient ward. Subsequently, he was made a regular employee, and transferred to the employees' home. He works as assistant to the head gardener. This is a good example of an "institutionalized" product. Having spent his entire life in an institution, at this late date he could not adjust to placement in the outside world.

The last of the employed subjects in the contrast group to be accounted for is the man previously referred to as standing out from the group. He is a composer and typesetter for a newspaper in a city of 300,000. His income is easily equal to that of all other employed contrast group members combined.

In the original study, the 13 children in the experimental group, all mentally retarded at the beginning of the study, experienced the effects of early intervention which consisted of a radical shift from one insti-

* Subsequent to the time of interview he completed his vocational training assignment and was discharged from the institution for the mentally retarded.

tutional environment to another institution which provided a much higher degree of one-to-one mother surrogate-child emotional relationships, and superior developmental stimulation. This was followed by placement in adoptive homes for 11 of the children.

The contrast group of 12 children, initially at a higher level of intelligence, were exposed to a relatively non-stimulating orphanage environment over a prolonged period of time.

In the present adult follow-up study, all cases have been located after a lapse of 21 years, with appropriate information secured on each one. Continuing into adulthood, the two groups have maintained the divergent pattern. All 13 children in the experimental group are self-supporting, and none is a ward of any institution, public or private. In the contrast group of 12 children, one died in adolescence following continued residence in a state institution for the mentally retarded; 4 were still wards of institutions, one in a mental hospital, and the other 3 in institutions for the mentally retarded.

In education, disparity between the two groups is striking. The contrast group completed a median of less than third grade. The experimental group completed a median of 12th grade. Four of the subjects have had one or more years of college work. One has received a B.A. degree and continued for graduate training.

Marked differences in occupational levels exist between the two groups. In the experimental group all are self-supporting, or married and functioning as housewives. The range is from professional and business to domestic service, the latter being represented by the two girls who were never placed in adoptive homes. In the contrast group, four or 36 per cent are institutionalized and unemployed. Those who are employed, with one exception, are characterized as "hewers of wood and drawers of water." Using the t test, the difference between the means (based on the Warner Index of Status Characteristics applied to heads of households) was statistically significant, $P<.01$.

Educational and occupational achievement and income for the 11 children from the experimental group compare favorably with the 1960 U.S. Census figures for Iowa and for the United States in general. Their adult status is equavalent to that which might have been expected of children by birth living with their natural parents in homes of comparable sociocultural levels. Where the children have married, their marriage partners have been of comparable sociocultural levels.

Eleven of the 13 children in the experimental group are married, and nine of these have a total of 28 children of their own, with an average of

three children per family. On intelligence tests, these second generation children have IQ's ranging from 86 to 125 with a mean of 103.9 and a median of 104. In no instance was these any indication of mental retardation, or demonstrable abnormality. Those of school age were in appropriate grades for age.

Only two of the subjects in the contrast group have married. One had one child and subsequently was divorced. Psychological examination of this child revealed marked mental retardation, with indications of probable brain damage. Another, male subject, has a nice home and family. There are four children, all of average and above average intelligence.

The costs to the state for the contrast group, for whom intervention was essentially limited to custodial care, was approximately five times that of the cost for the experimental group, in which the intervention included enriched environmental experiences, and a close emotional relationship between child and mother surrogate. Furthermore, it seems a safe prediction that for at least four of the cases in the contrast group, costs to the state will continue, at a rate in excess of $200 per month, for another 20 to 40 years. The 11 children in the experimental group at the beginning of the study evidenced marked mental retardation. The developmental trend was reversed through planned intervention during the experimental period. The program of nurturance and cognitive stimulation was followed by placement in adoptive homes providing love and affection and normal life experiences. The normal average intellectual level attained in middle childhood has been maintained into adulthood.

It can be postulated that if the children in the contrast group as well as the experimental group of the present study could have been placed in suitable adoptive homes, or some other appropriate equivalent in early infancy, that most or all of the children from both groups could have achieved within the normal range of development.

It seems obvious that under present day conditions that are still countless numbers of infants born with sound biological constitutions and with potentialities for development well within the normal range, who will become mentally retarded and a burden to society unless appropriate intervention occurs. It is suggested by the findings of this study and substantiated by other studies published in the past 20 years, that we have sufficient knowledge to design programs of intervention which can counteract the devastating effects of poverty, sociocultural deprivation and maternal deprivation.

Since this was a pioneering, descriptive type of study, and with a small number of cases, it would be presumptuous to attempt to identify specific

components in a cause and effect type of relationship. Rather, the observations of Macfarlane, Allen and Honzik (1962), seem particularly appropriate to this study as well: "We speculated about the possible explanation for these differences, but the fact emerges that personality needs much more detailed investigation into the situational factors and combinations of factors, including inter-personal relations, same sex and cross sex expectancies, and child training processes, disruptions and changes in personality relationships, if we are to point up the important factors in personality development which these simple sib order findings have thrown into relief. . . . The other findings relating to problems of health, nutritional, and maturational status, IQ, and IQ variability, and to characteristics of the mothers are too fragmentary and too unsystematically covered in this report to summarize. Even these fragmentary data seemed worth including if for no other reason than to point out the multifactor nature of personality and behavior dynamics, and to emphasize the necessity of avoiding over-generalization at the present state of our limited knowledge, and of avoiding premature theoretical closure until, from more samples of growing children, a representative sample of biosocial facts is available and integrated."

In the past, much has been written concerning the hazards of predicting later intelligence from intelligence tests given in early childhood. The problem has frequently been confounded by limiting the prediction formula to test-retest scores, and thus leaving out one of the most important items in the formula—namely, what happened to the individual during the time interval between tests.

Hunt (1964) has most aptly pinpointed the problem: ". . .In fact, trying to predict what the IQ of an individual child will be at age 18 from a DQ obtained during his first or second year is much like trying to predict how fast a feather might fall in a hurricane. The law of falling bodies holds only under the specified and controlled conditions of a vacuum. Similarly, any laws concerning the rate of intellectual growth must take into account the series of environmental encounters which constitute the conditions of that growth."

The divergence in mental growth patterns between children in the experimental and contrast groups is a striking illustration of this concept.

The Role of Language in the Development of the Preschool Deaf Child*

BORIS V. MORKOVIN

THE PROBLEM

One of the most important problems of our time is that of reform in education and specifically, in the education of handicapped children. The child who is handicapped by deafness may fail in his education because his brain is never properly reached due to his language deficiency.

Therefore, I read with great concern the 1965 report of the Advisory Committee on the Education of the Deaf to the Secretary of Health, Education and Welfare,[1] in which the situation of the deaf was called tragic, because the deaf adult cannot communicate with the society in which he lives. Five-sixths of these people are manual workers who are losing their positions rapidly through automation. What is their future?

That panel recommended above all, a study of an area, which has been left comparatively unexplored,—that of the process of language-learning by deaf children. The overwhelming majority of the graduates of both residential and non-residential schools cannot communicate with the hearing public. According to Marshall Hester, of the New Mexico School for the Deaf,[2] only about 20 per cent of their graduates can communicate, and not necessarily orally, and these are generally of a higher IQ than the other students.

Even Leo Connor, principal of the outstanding oral school of Lexington Avenue in New York, in his article "Secondary Education of Deaf Children,"[3] says that "It is with the great majority of deaf children (IQ's 80-120) that our school programs are doing no better than they were 25 years ago." The Advisory Committee on the Education of the Deaf, in the report mentioned above, pointed out emphatically, the need for "a dramatic improvement in language learning. . . ."[4]

American educators of the deaf have become greatly interested in the "teaching experiments" with deaf preschool children conducted by the

* This paper has been given in partial fulfillment of contract NB 05801-02 with the National Institute of Neurological Diseases and Blindness.

Moscow Institute of Defectology in 1953-1954.[5] The Soviet investigation showed that deaf children even in the 7th and 8th grades could not communicate with hearing people. (The material to which I refer pertains only to the deaf. The hard of hearing are not included because they are taught in separate schools in the U.S.S.R.)

The results of repeated experiments in the study of language-learning by deaf preschoolers led to the initiation of new methods of instruction, which were developed into a course of study.[6] The Pure Oral Method (POM), which had been used previously, failed because it proved to be inadequate for the development of oral communication, and unable to bring out the full potentiality of the deaf child. POM did not prepare the preschoolers for oral instruction in elementary school and it did not contribute substantially to the "overall habilitation of the deaf child."

The research of A.R. Luria[7] showed the importance of the early acquisition of speech for a hearing child. Luria made a study of neglected identical twins who had normal hearing but no intelligible speech at the age of five. These children underwent a striking transformation during the ten months after they were separated and placed in different kindergartens. As they learned an articulate language and speech, their behavior, attitudes and ability to think changed considerably.

According to the Soviet conception, the learning of language by deaf children is not a mere process of memorizing dictionary words. It is the development of an instrument of higher adaptation to our society by means of systematic communication. The process is a part of social integration into his group which affects his whole personality. It is regrettable that so many teachers conceive language-learning as a drill learned by rote—as techniques of pronunciation, grammar, finger spelling, etc.

The Soviet approach is based upon different principles. It cannot be compared to the foreign language-learning of an adult, by a mechanical accumulation of words and rules for future use.

For the Soviet preschooler, learning language is an active process which is a part of his growth and development. The objective of the experimenters has been to approximate the development of the deaf preschool child with that of the hearing child, who is able to proceed in learning language through his own effort.

The important factor in the development of an effective language by the deaf child is the early accessibility of an unrestricted vocabulary for spontaneous communication. Constant communication with adults and contemporaries assists in his social integration and helps the deaf child to internalize patterns of action, perception and thinking, as well as

social norms, standards and values. In other words, Soviet teachers, while developing language, make it an instrument of an active personality. The growth of the child's personality improves his language; and, at the same time, the constantly improving language helps his personality as he is able to express more adequately his thoughts and feelings.

It was the conviction of the Moscow Institute of Defectology that the Pure Oral Method failed, from the beginning of language-teaching, to provide children with spontaneous communication. Young deaf children were unable to pronounce the words needed for everyday activities. On the other hand, MID took a firm stand against the use of sign language. They maintained that it is not a language of contemporary culture because it is not an inflected and syntactic language, not a language adapted to conceptualization. It is gestural mimicry, a language which hinders the child in assimilating his social heritage.

WHY AND WHEN FINGER SPELLING?

Therefore, MID decided to find, experimentally, a device which could accelerate the learning of full-fledged oral language, and which would yield easily to oral language when its temporary purpose had been accomplished.

In their experimental group the teachers found: 1. That finger spelling is accessible to children, to teachers and parents without difficulty; 2. It can initiate the necessary early communication; 3. At the same time, finger spelling could serve as a catalyst, and change the global (on sight) image of the structure of words, into an exact, analytical sequence of phonemes.[8]

Efimova and Pavlova, the teachers in Leningrad, who had been leaders in the POM for more than two decades, accepted with some hesitation the experimental use of finger spelling. To their surprise, at the end of the second year of teaching their experimental group, they had achieved a four-hundred per cent larger oral vocabulary than they had achieved after three years of teaching with the Pure Oral Method. By the beginning of the third year, their group could communicate not only on the level of concrete situations at hand, but also on the level of past and future events. Efimova and Pavlova found that finger spelling was a *key,* temporarily, not only to communication, but also to analytical reading, to accurate lipreading, to the development of intelligible speech, and to mechanical skills such as typewriting.

FINGER SPELLING AND ORAL LANGUAGE

Why did finger spelling help the children to read lips? Because only seventeen per cent of lipreading consists of visible signs read on the lips. The lipreader has to guess the rest of the content of conversation from context. The teachers had the children constantly finger spell words on flash cards, accompanied by voiced language. This analytical spelling gave the child an exact image of the structure of language, word by word, phoneme by phoneme. In this way, it was possible for children to amplify and make more accurate their lipreading and their speech when they spoke.

Without much effort, children learned to fuse phonemes by using finger spelling combined with flash cards. At the age of three-and-one-half to four-and-one-half years, they could read easily all legends under pictures, street signs, blackboard writing and abbreviated fairy tales. They also learned to type. Interestingly, I saw one girl typing with one hand while using the other to finger spell, to make certain the sequence of particular letters was correct. However, this girl in her third year of kindergarten, did not use finger spelling while conversing on simple matters.

THE SYSTEM AND COURSE OF STUDY

This achievement in the teaching of language and the development of the child's personality was possible for the Soviet teachers not because of the use of finger spelling per se, but because of the organization of a special system in a highly structured environment through planned teaching.[9] Finger spelling was only an incidental crutch, which enabled the child to start the wheels turning, i.e., to begin to communicate unrestrictedly, thus opening for himself the floodgates of new experiences.

The success in implementing this language organizationally and methodologically was based on the intensive teaching of two aspects of language and speech, namely:

1. Conversational speech, by the "mothers' method." Words were given to the children as they needed them throughout the day in their play and activities. At first in the form of "dactylology" (finger spelling) and then by means of oral speech and lipreading, the children communicated constantly throughout their whole waking period. Two informal teachers, called "mother substitutes in their bringing up," (in Russian, *vospitanie*), taught the children this aspect of language and speech, in six hour shifts.

2. Conceptualized, grammatical speech and language was taught by a different teacher in formal instruction (in Russian, *obuchenie*) in three periods during the day of fifteen to thirty-five minutes each, according to the age of the child. The formal teachers used the conversational vocabulary acquired in play and activities with the mother substitute as a basis for the development of conceptualized and grammatical language. The intermeshing of these two aspects of language and speech enabled the children to communicate on a higher level.

In order to elevate the child to a higher level of communication, with a wider range of experience and a more precise form of expression, he must be motivated. In order to stimulate the interest of the child to produce an effective motivation, the teacher must study each child and discover his greatest potentiality.[10] She accomplishes this by keeping daily individual records, and through conferences with the child's other teachers and his psychologist. By finding the child's special abilities and interests, the teacher helps him to advance, showing him how to make the next small step in his play or tasks. What he can achieve with the help of the teacher one day, the child can accomplish independently the next. The Soviet educators believe in the formative power of education. They have ceased to use IQ tests because they consider the mental processes of the child to be developmental, not statistical. However, they acknowledge that each child progresses at his own tempo.

Teachers in the education of deaf preschoolers discourage children from idleness and senseless behavior, and insist that the parents do likewise. In residential schools, the children are constantly occupied in a variety of interesting and constructive activities and play, outdoors and indoors, continuously communicating with adults and other children in a joyful atmosphere. The deaf children must get used to a definite order and schedule so that they are not confused by constant changes in regulations.

THE PRIMARY LEVEL OF COMMUNICATION

In an analysis of the process of language-learning by the deaf child, it is necessary to keep in mind the different levels of communication, the different functions of language, and their relations to the developing personality. The elementary function of language is communication for the satisfaction of physical needs and for the child's orientation to surrounding reality.

This phase starts with the non-verbal communication of the child, in which he points out objects; he imitates actions and he reproduces the

physical situation. Non-verbal communication is gradually reinforced by introducing words closely related to objects. The meaning of these words is derived from association with the material objects of the concrete situation. They are rooted in the "first" (sensory motor) "signals," from the environment. (Pavlov's "First Signal System"). They are based on sight, touch, kinesthesia and other senses, as well as fragments of residual hearing.

Although the words are introduced and used early, their power grows gradually and at the beginning, the material, concrete situation dominates the child's communication. Only with the growth and development of the child, the second signal system comes into its own and begins to dominate the behavior and thinking of the child.

COMMUNICATION AND PERSONALITY DEVELOPMENT OF THE DEAF CHILD ON A HIGHER LEVEL

As the child learns speech and lipreading along with the rudiments of reading, grammar and concept formation, his language gradually becomes emancipated from direct dependence upon specific "here and now" situations. At the end of the second year and in the third year (age six and seven) a new qualitatively different language with new emergent functions, begins to assert itself in the child's communication. He accumulates as many as fifteen hundred to two thousand functional and oral words. His experience and contacts are widened through reading, excursions in the city and travel with his parents. A new horizon opens to the child and his personality becomes greatly activated by utilizing his experiences in the past and his expectations of the future.

In the last year, preparatory to his entrance into elementary school, the child acquires connected language and is able to give accounts of his experiences. His communication becomes a conscious instrument, guiding him in his purposeful and directed activities. The words in the child's simple grammatically constructed sentences do not depend upon direct stimuli and physical situations for their meaning, but rather on the continuity of their thought. The "first signal system" and the "second signal system" are synthesized, and together form an effective language. Without the direct or indirect support of the sensory-motor experience of the first signal system, language does not grow in its analytical, integrative function. With language and thought (i.e. second signal system) organizing the child's behavior, his communication reaches a higher level.

The deaf child, like the hearing child, learns to learn by himself. He learns new words on his own initiative and cooperates with teachers and parents as an active agent in his overall habilitation.

The effectiveness of the second signal system varies with different children. However, if the child receives appropriate experience and training, in well structured situations, language becomes a compensatory tool in his adjustment.

REFERENCES

[1] *Education of the Deaf.* Washington, D.C.: U.S. Department of Health, Education and Welfare, 15.

[2] Hester, Marshall S. *Manual Communication.* Washington, D.C.: International Congress on the Education of the Deaf, June 1963.

[3] Scouten, Edward L. "Scoutin' Around," *Pelican,* April 1965, 5.

[4] *Education of the Deaf.* Washington, D.C.: U.S. Department of Health, Education and Welfare, 47.

[5] Morkovin, B. V. "Experiment in Teaching Deaf Preschool Children in the Soviet Union," *Volta Review,* 62 (1960), 260-8.

[6] Ministry of Education, RSFSR. *Program of Bringing up and Teaching of the Preschool Deaf Children in Russia.* Moscow: Acad. Pedagog. Sciences, 1964.

[7] Luria, I. R. and Yudovich, F. Y. *Speech and Mental Development in the Child.* London: Staples Press, 1959.

[8] Efimova, N. E. and Pavlova, E. E. From the book, *Teaching and Bringing up of Deaf Children of Preschool Age,* edited by Morozova and Korsunskaia. Moscow: Acad. Pedagog. Sciences, 1958, 32-92.

[9] *Ibid.*

[10] Vigotsky, L. S. *Thought and Language.* New York and London: John Wiley & Sons, Inc., 103.

Language Behavior of Mentally Retarded and Culturally Disadvantaged Children*

MELVYN I. SEMMEL

Language behavior is so pervasive in the child's functioning as to play a significant role in almost every aspect of adaptation. It has become obvious that any theory of human behavior which aspires to validity and generality will have to account for man's unique ability to acquire and generate language. Hence, many psychologists and educators have revealed an increasing interest in the fields of linguistics and psycholinguistics toward furthering their understanding of the psycho-educational functioning of children.

When a child demonstrates subaverage general intelligence in conjunction with relatively slow maturation, difficulties in school learning, and/or problems in social adjustment, he is classified *Mentally Retarded* (Heber, 1961). The subaverage intellectual functioning and impairments in adaptive behavior which define mental retardation are so highly correlated with language behavior that we might profitably view the condition primarily within the context of language competence and performance. Many items on individual intelligence tests load heavily on verbal factors. Delayed language development is among the earliest and most significant symptoms of mental handicap. School learning in almost all curriculum areas is highly dependent upon the child's language facility. Social adaptation is directly related to the ability to accurately decode, interpret, and encode language. One obvious advantage to viewing the problem of mental retardation in the context of language deficit is that such an orientation might eventually lead to the specification of variables producing inadequacies of children in direct relation to school functioning.

We have frequently referred to mental retardation as an explanatory construct. When, for example, a child is performing below grade level

* The writing of this paper and the author's research reported herein was partially supported by the Language Development Section, U.S.O.E., Contract OEC-3-6-061784-0508.

and shows low measured intelligence, it is often the case that his poor achievement is "explained" by invoking his "mental retardation" or "low intelligence." Such a practice lends little to an understanding of school functioning—it leads to a false security about the nature of the child's educational deficits. Unfortunately the result of diagnosing a child as retarded is frequently characterized by the absence of a prescribed program leading to the amelioration of poor school achievement. The purpose of educational diagnosis is to determine the nature of the child's educational problem, to identify the variables contributing to the problem, and the determination of the conditions under which his problem can be overcome through pedagogical intervention. Perhaps we have been slow to develop appropriate and effective educational methods for the retarded child because we are lulled into a false sense of complacency by diagnostic procedures resulting in little more than a label for a child, which is then used to explain the behavior summarized by that label. We must avoid the circularity in many of our diagnostic efforts. I believe that a profitable approach is to focus on *language behavior* as a means for eventually understanding and modifying the school performance of mentally retarded children.

When viewing school achievement within a language model one is led to the study of reading performance, for example, by analyzing the relationship between the linguistic content of material to be read and the language competence of the reader, in conjunction with other psychological and environmental variables that might possibly bear on observable reading behavior.

An emphasis on language behavior also presents an excellent opportunity to examine the utility of existing systems of classification for school purposes. The great percentage of educable mentally retarded (EMR) children fall within the broader category of *culturally disadvantaged*. Most disadvantaged children are not mentally retarded. Nevertheless, most non-retarded children from lower class families do appear to demonstrate lower IQ scores on tests which are heavily saturated with a verbal factor when compared to advantaged children. The verbal scores of disadvantaged children are depressed in comparison to their scores on non-verbal tests. (Bernstein, 1961). Since the curriculum of the school is highly dependent upon verbal skills, it is not surprising that disadvantaged pupils are usually found deficient in school performance (i.e., reading and writing) when compared to advantaged pupils. We find then that both retarded and non-retarded disadvantaged children perform poorly in school achievement as well as on intelligence tests.

The non-verbal abilities of the disadvantaged youngster are often not assessed by traditional methods of intelligence testing. Quantitative differences between children's scores on IQ tests like the Stanford-Binet are not a sufficient criterion for making important distinctions between the educational potential of children within the disadvantaged group. Perhaps systematic study of the language behavior used by such children will supply effective leads to cognitive functioning and may lead to more effective groupings and pedogogic techniques than those currently being used—namely, the practice of assigning children *in* or *out* of the MR classification. In the last analysis we are interested in knowing the conditions under which behavior in school can be modified. Classification of children should be directly related to this interest. In view of the relationship of language behavior and school functioning, classifications of children might profitably be based on individual differences in the quality of their language competence and performance.

LINGUISTIC CONCEPTS

Language has been defined by Carroll (1953, p. 10) as ". . . a structured system of arbitrary vocal sounds and sequences of sounds which is used, or can be used, in interpersonal communication by an aggregation of human beings, and which rather exhaustively catalogs the things, events, and processes in the human environment." We note that language is thought of as an underlying code which children acquire and which determines the nature of their overt performance.

It is important to distinguish between linguistic *performance* and *competence*. Performance relates to the child's verbalizations, his observable language behavior. Competence, on the other hand, implies the nature of what the child has learned that constitutes the structured system we refer to as being language—the linguistic information which he has acquired which determines the maximum limits of his linguistic performance. Since we do not know how linguistic competence is acquired, it is difficult to determine the role of intelligence and experience in determining its level. However, it appears reasonable to assert that competence sets the upper limit of linguistic performance and thus, determines the upper limit of speaking, reading, writing, and listening behavior.

Linguists have traditionally categorized language into a four-class taxonomy. Language has a phonological component, morphological, and syntactic components, and a semantic aspect. The *phonological* aspects comprise a system of distinctive sound units (phonemes) from which words and other language forms are constructed. *Morphology* refers to

a system of fundamental meaningful units (morphemes) such as words and other forms. The morphological component specifies the ways in which morphemes may be used and modifield in different language situations. The *syntax* of a language code refers to the system of arranging words and other linguistic forms in patterns (phrases, sentences, etc.) and the modification and transformation rules governing permissible patterns in a language. Finally, the *semantic* aspects of the system refer to the meanings attributed to linguistic forms and patterns in relationship to referents in the environment of the language user. (See Carroll, 1964).

This linguistic taxonomy reflects an emphasis on language structure and content which is relatively independent of the psychological variables that might be associated with developing language competence, or affecting language performance. Psychologists, on the other hand, have primarily focused their interest in language behavior through the development of models which tend to minimize the role of language structure and content. They have generally utilized such constructs as ***contiguity, stimulus, response, association, mediation,*** and ***reinforcement*** to account for language acquisition and language behavior. As more is learned about the nature of language behavior, it has become apparent that there are powerful variables within the structure of language itself which interact with other psychological variables (i.e., memory, cognition, etc.) to affect the child's functioning.

Research related to the language of mentally retarded and/or culturally disadvantaged children has traditionally focused on the phonological and semantic aspects of the child's language system and the psychological variables which affect such behavior. The literature is replete with studies of articulation deficits of MR children, the effects of nonstandard English dialect of the disadvantaged, vocabulary usage, etc. Only recently have we recognized that language development implies more than the simple acquisition of skills for the production or discrimination of words or differentiating the meanings of words. Most linguists appear to agree that the utterance frame is the fundamental unit of language behavior. Hence, the study of the grammatical aspects of language of retarded and/or disadvantaged children appears particularly fruitful.

McNeill (1966) has pointed out that by age 18 months normally developing children are able to produce simple sentences. By age four these children are able to produce an infinite number of sentences, of every syntactic type. Hence, in an incredibly short period of time, the

normally developing child has acquired the underlying code which we have defined as language. Unfortunately, there is very little evidence available which tells us to what extent retarded and/or disadvantaged children depart from this pattern of language acquisition. For that matter, we do not know how normally developing advantaged youngsters manage to acquire a complex language system by age four. The study of the acquisition of language in retarded and/or disadvantaged children may assist in answering these penetrating questions relative to language acquisition.

What is actually acquired by a young child, which permits the rapid acquisition and generation of language performance? It is apparently an abstract set of powerful rules and principles—a grammar. Hence, when a retarded child begins to use simple sentences, he is at the same time evidencing an implicit knowledge of the abstract rules and principles which govern the language performance witnessed. For example, the child who says, "John hit Mary" and later appropriately says, "Mary hit John" has demonstrated the acquisition of the subject-predicate relationship; and has also indicated a knowledge of the syntactic relationship which exists between the noun and verb form-classes. Such competence attributed to a retarded child has profound implications for our contemporary view of mental defect which includes limited abstract ability as a central defining characteristic of children so classified. Hence, an understanding of the extent to which retarded and/or disadvantaged children acquire language competence may lead to an understanding of their relative capabilities in developing hierarchical concept formations. Through systematic study of what specific competencies are acquired by school age children we may be able to explain, and possibly correct, deficiencies in their reading, listening, and writing performance. A valid measure of language competence would probably be more effective in determining the upper limits of academic functioning than using mental age to determine grade expectancy.

CONTEMPORARY MODELS OF LINGUISTIC DEVELOPMENT

Workers interested in understanding and differentiating children with language deficits must eventually wrestle with the problem of how language is acquired. We must first know the "normal" sequential order of development of specific language competencies if the specification of language deviance is to be realized. But we must also have some commitment to a formulation which accounts for two specific competencies are achieved. A theory serves as a basic guide for the development of

ameliorative techniques to rectify the language deviations identified.

Several psychological theories have been posited to account for linguistic development. One of the most popular views is that children learn language through imitating parental models and practicing them until they become a functional part of an operating repetoire. McNeill (1966) has pointed out that many features of linguistic competence are not available for the child to imitate—they are part of the deep structure of language. He has indicated that young children tend to first use strong verbs correctly (e.g., did, came, ran) but later appear to regularize these verbs (e.g., doed, comed, runned) and still later return to the appropriate past-tense form of strong verbs. If children learn language by imitation and practice it is difficult to explain why they extinguish the appropriate past-tense of strong verbs in favor of regularizing the strong verbs which are not generally used by adult speakers. McNeill concludes, that apparently patterns are more important as children develop language than is frequency of repetition.

Another view of language acquisition is based upon the stimulus-response (S-R) constructs used by behavioristically oriented psychologists to account for learning. It has been pointed out by the linguist Noam Chomsky (1959) that traditional S-R theories simply cannot account for language acquisition. Chomsky points out that the critical terms *stimulus* and *response* are vague and circular. McNeill (1966) commenting on the inadequacy of simple S-R positions concludes, ". . . if we take the terms response and stimulus literally, as being behavior evoked by known external conditions, we must conclude that very little linguistic behavior consists of responses, and that very much linguistic behavior is unstimulated. It is not the case that *'I forgot my appointment yesterday'* is evoked by a stimulus, if by stimulus anything definite is meant, and accordingly, the utterance is not a response, but instead is an unstimulated vocalization. If one imposes the S-R paradigm, such behavior simply falls outside the system." Hence, simple S-R theories like that proposed by B. F. Skinner cannot account for the acquisition of language structure. Using similar arguments to those used by Chomsky and McNeill, Fodor (1965) has demonstrated the inadequacy of mediation S-R models like those presented by Osgood, et al (1957), Jenkins and Palermo (1964), and Mowrer (1960).

The critical analyses of existing psychological language acquisition models by transformational grammarians have led most psycholinguistics to reject simple and mediated S-R paradigms. Contemporary linguistic theorist appear to support a position which contends that children are

endowed with a "biologically based capacity for language." The child utilizes this predisposition for language by sampling his language environment and constructing a competence (develops a grammar) of the language to which he is exposed. The child is seen as having an inborn capacity represented by a set of linguistic universal statements organized into a linguistic theory which is used to acquire language. Work is currently being conducted to identify these linguistic universals. It would be of considerable interest to determine the extent to which hypothesized language universals are acquired by retarded and/or disadvantaged children. Perhaps the extent of acquisition of such universals can reflect a dimension of individual differences which will permit more meaningful differentiation of groups within the disadvantaged category; and permit clearer differentiation between functional and genetic mental deficit.

THE MEASUREMENT OF LANGUAGE

We have indicated the need to assess language functioning prior to the development of educational programs designed to stimulate language development and correct linguistic deficits. It appears to be too early in the course of linguistic research to develop a comprehensive test for assessing the level and nature of linguistic universals attained by retarded and/or disadvantaged children. However, the vulnerable psychological model posited by Osgood (1957) has served a valuable guide to the development of a comprehensive battery for assessing psycholinguistic abilities.

Kirk and McCarthy (1961) have developed the Illinois Test of Psycholinguistic Abilities (ITPA), which is the most abitious attempt to date to assess the diffierential language abilities of young children. The test, following Osgood's theory, conceives of language behavior as encompassing three dimensions: channels of communication, psycholinguistic processes, and levels of psycholinguistic functioning. The ITPA is composed of nine subtests which proport to tap decoding, association, and encoding processes through auditory, visual, vocal, and/or motor channels at the representational (meaningful) or automatic-sequential levels of psycholinguistic functioning. A critical evaluation of this instrument was recently published by our group (Weener, Barritt, and Semmel, 1966) in which the statistical characteristics and limitations of the instrument are detailed. In spite of the limitations of Osgood's mediation S-R model and the statistical limitations of the ITPA, some interesting preliminary data have been reported relative to the performance of retarded and disadvantaged children on the ITPA.

Bateman and Wetherell (1965) and others have reported that retarded children reveal a characteristic pattern of psycholinguistic deficits on the ITPA subscales. Retardates are particularly deficient on a digit repetition task (Auditory-Vocal Sequential Scale); immediate recall of visual symbols (Visual-Motor Sequential Scale); and in supplying the correct grammatical form of words within sentences (Auditory-Vocal Automatic Scale). We note that retarded children are apparently most deficient in their ability to sequence the "psycholinguistic" stimuli of the ITPA and show particular weakness in grammatical ability as defined by the test.

One interpretation of the findings has been suggested by Bateman (unpublished paper) who claimed that deficiencies in sequential tests reflect a basic short term memory deficit in retarded children. The grammatical deficit, according to Bateman, reflects the retarded child's lack of internal learning set which results in deficient incidental learning. It is argued that since grammar is learned incidentally by younger children, deficiencies on the grammar subtest simply reflect the retardate's deficient incidental learning skills.

By way of contrast with the data on retarded children we investigated the relative psycholinguistic functioning of non-retarded disadvantaged children on the ITPA. The study (Barritt, Semmel and Weener, 1966) was designed to compare deprived Negro children in a *de facto* segregated school with deprived Negro children in an integrated school and a group of advantaged White children placed in schools having no Negro pupils. Of interest to the present discussion is the fact that the disadvantaged pupils showed lower performance scores than the middle class youngsters on all subscales of the ITPA except on the two sequencing scales and on a scale requiring verbal descriptions of objects. The disadvantaged group in the segregated school was relatively deficient on the "grammar" scale (Auditory-Vocal Automatic).

In summary, retarded children tend to reveal relatively deficient performance on sequential tasks but non-retarded, disadvantaged youngsters perform relatively well on the same ITPA scales. However, both groups appear to be particularly deficient in performance on the "grammar" scale of the test.

Several problems arise in the interpretation of the ITPA data reviewed above. Osgood's model does not account for the role of linguistic structure or content in processing language. This is reflected in the development of the ITPA and the subsequent interpretation of the subscales. It should be noted that while according to the ITPA, retarded children have a

relative weakness at the postulated sequential level of psycholinguistic functioning, the stimulus materials contained in the subtests at this hypothetical level are essentially non-linguistic in nature. The Auditory-Vocal Sequential scale requires the repetition of unrelated digits. The Visual-Motor Sequential Scale requires the visual memory of a sequence of unrelated geometric forms. Hence, unlike any meaningful pattern of linguistic units, the stimuli used on the ITPA sequential scales contain *no* particular association strength between adjacent units (have an extremely low transitional probability from digit to digit, or figure to figure) and have *no* syntactic structure. Therefore, while it is probable that these scales *do* reflect the deficient short term memory of retarded children, they tell us little about the strength of *sequential language* habits of retarded children. One obvious question is to what extent can the short term memory of retarded children be facilitated by the structural linguistic variables found within stimuli that they are required to process in natural language contexts?

The data cited earlier revealed that non-retarded disadvantaged children performed relatively well on the sequential scales of the ITPA. It is possible that the sequential tasks are relatively culture free—involving numbers and geometric figures and requiring simple sequential memory. In other words, performance on sequential subtests is probably dependent on the relatively fixed capacity of a child's short-term memory, while other subtests require the ability to "structure" learning which is relatively more dependent upon experience. Educable mentally retarded (EMR) children from disadvantaged backgrounds probably do poorly on the sequential scales of the ITPA because they have poor short-term memories and obtain no facilitation from test stimuli which lack associative or syntactic relationships. The non-retarded disadvantaged children probably do well on the sequential scales because, like other non-retarded children, they have intact short-term memory functions and are not hampered by culturally biasing associations in the stimuli or by a biasing syntactic structure of the material to be processed.

The data relative to grammatical functioning is particularly interesting because both retarded and disadvantaged children apparently have great difficulty in this area. First, it should be noted that the ITPA "grammar" scale relates primarily to the morphological component of language structure in requiring subjects to supply appropriate inflections (e.g., Here is a dog. Here are two .....) However, many studies have documented particular problems of disadvantaged children in the syntactic component of their language. An incidental learning explanation

for the ITPA data is not sufficient since the retarded child obviously brings a degree of grammatical competence to the testing situation and uses specific grammatical competencies in other sub-tests of the ITPA. Only through more extensive study of these specific competencies will we be able to explain the meaning of the low "grammar" sub-test scores of retarded and/or disadvantaged children.

SEQUENTIAL AND GRAMMATICAL STRATEGIES

It is perhaps profitable to view sequential and grammatical skills as hierarchically organized language strategies used by children to process linguistic data. Sequential skills are relatively primitive in that they evolve as a function of the frequency of experiencing associations between linguistic units in a language environment. Grammatical skills are more abstract in that they take the form of rules which determine allowable relations and transformations between linguistic units. The generality of grammatical strategies make them more powerful tools for generating and processing language and therefore, have greater adaptive significance. Hence, strong grammatical habits are probably related to more proficient language behavior while sequential habits are associated with limited language proficiency. The poor sequential functioning of retarded children on the ITPA appears troublesome to our view since we are led to maintain that retarded children primarily utilize sequential strategies in decoding and encoding language. We have argued, however, that the ITPA sequential scales are not adequate tests of sequential *language* habits because the stimuli presented have no linguistic or associative relationships. Our interest in grammatical and sequential language skills of retarded and non-retarded disadvantaged children led to a series of comparative investigations designed to explore these issues further.

WORD ASSOCIATIONS OF RETARDED AND NON-RETARDED CHILDREN

Brown and Berko (1960) and others demonstrated that as normal children develop linguistically there is a progressive change in the form of word association responses. Young children asked to supply the first word that comes to mind when presented with a stimulus word generally emit a response which follows the stimulus word in natural language situations. Hence, when given the word "red" young children might say "apple." This response can be thought of as demonstrating a sequential strategy. Sequential responses are those where the stimulus and response are likely to occur in contiguous relationships within a

language context (i.e., "The *red apple* . . ."). As children grow older there is a tendency for sequential associations to diminish and a shift takes place in which associations tend to be of the same grammatical form-class as the stimulus words (viz., stimulus: *red*—response: *black*). This progression from sequential (syntagmatic) to same form-class (paridigmatic) word associations is suggested as evidence for an increasing grammatical competence in language functioning (from units to grammatical classes).

We (Semmel, Barritt, Bennett, and Perfetti, 1966) administered a word association task to disadvantaged EMR children and two groups of disadvantaged non-retarded youngsters—one matched for CA, and the other matched for M.A. with the EMR group. Our findings revealed that the 10 to 13 year old EMR children gave significantly more sequential responses than the non-retarded CA matched children. Retarded children demonstrated sequential associations with significantly greater frequency than paridigmatic (same form-class) responses. In other words, the EMR children were relatively weaker in demonstrating grammatical strategies when compared to the equal CA disadvantaged youngsters of normal intelligence. The EMR sample showed a predominance of sequential associations and functioned very much like the equal M.A. non-retarded, disadvantaged children (7 to 10 year olds). Hence, it would appear that sequential strategies are at a lower level of functioning when compared to paridigmatic strategies, at least when mental age is considered a measure of adaptive behavior level. Furthermore, it would appear from a cross-sectional view that non-retarded disadvantaged children apparently undergo the paridigmatic shift described by Brown and his associates, whereas EMR children do not adopt the paridigmatic strategy by the time they reach preadolescence. It should be remembered that the word association study does not deny that non-retarded disadvantaged, have grammatical deficits as compared to advantaged, average IQ children. The findings do imply that while both non-retarded and retarded disadvantaged children may both have grammatical deficits, the former group is apparently using grammatical strategies more than retarded children in language decoding and encoding. It is not yet known whether EMRs eventually adopt the paridigmatic mode in adulthood and thereby demonstrate a kind of slow motion development of specific language competencies.

CLOZE PERFORMANCE OF EMR AND NON-RETARDED CHILDREN

Roman Jacobson, a prominent linguist, has described two types of aphasic disorders. The first, he calls a *similarity* disorder (paridigmatic) in which patients have particular difficulty in word finding, labeling, and categorizing. The second is called a *sequential* disorder in which patients have particular difficulty in completing sentences, and in processing linguistic units sequentially. It appeared to us that the similarity disorder described by Jacobson was at least analoguous to our view of the language problems of retarded children. An organism with a similarity (paridigmatic) disorder would be expected to have particular difficulty in supplying words deleted from sentences (Cloze procedure) when compared to normally functioning persons. If presented with the sentence: "The boy ..... home", retarded children should have particular difficulty in supplying an appropriate word in the blank because their weak grammatical competence would limit selection of a word from the appropriate form class having privilege of occurrence in that slot (viz., verb).

We reasoned that disadvantaged EMR children would perform more poorly on the Cloze task when compared to non-retarded disadvantaged children matched for M.A. and C.A. respectively. We also predicted that when asked to complete blanks at the end of the sentences EMRs would show marked improvement because the relatively long sequence of words preceding the blank would cue their sequential strategies and permit appropriate associative (sequential) responses.

Our predictions were substantiated by the data. In fact, the EMR children performed as well as the equal C.A. non-retarded children in completing blanks at the final position of sentences. However, the performance of EMR children on the total Cloze task (across all positions) was inferior even to the younger non-retarded children matched for M.A. Of particular importance was the moderately high correlation ($r=.54$) obtained between Cloze performance and the incidence of paridigmatic responding on the previously discussed word-association task.

These results imply at least the possibility that the language functioning of retarded children cannot be simply explained by, or predicted from, their mental age. There appears to be a qualitative difference in the language strategies used by retarded and non-retarded disadvantaged children. Sequential skills are characteristic of retarded language strategies, while grammatical and sequential skills appear to be synchronized in non-retarded children. In linguistic terms we suggest that perhaps

the retarded child operates primarily on the surface structure of language —and derives relatively little from the base structure of linguistic constructions. He is therefore relatively more dependent on the frequency of occurrance of linguistic forms and patterns as he experiences them in his natural language environment.

THE ROLE OF GRAMMATICAL FORM-CLASS

It was maintained earlier in this paper that there are variables within the structure of language itself that apparently influence psychological functioning. There appears to be some limited evidence in support of this hypothesis which will be briefly summarized.

We (Semmel and Herzog, 1966) constructed lists of words composed of high frequency adjectives, nouns, verbs, and adverbs and administered them to groups of nine year old and 13 year old EMR children. The subjects were asked to recall as many of the words as possible after hearing an entire list read. All words were selected from a list of most commonly used words by retarded children. We found that both the younger and older groups could recall significantly more *nouns* than any other form-class. Verbs and adverbs were most difficult for younger children to recall—the older subjects had relatively less difficulty than younger pupils in recalling adverbs. In general, we found nouns and adjectives to facilitate recall but verbs and adverbs most difficult to recall.

The results of the recall study may reflect the concrete nature of cognitive functioning of EMR children. Nouns and adjectives usually represent phenomena in the physical environment which have specific perceptual qualities. Verbs and adverbs tend to be more abstract in characterizing relationships between phenomena in the physical environment.

We have seen one example of how retarded children's ability to recall stimuli is affected by the grammatical characteristics of linguistic stimuli presented. If asked to recall nouns alone, we might have concluded that EMR children have intact memory functions. If asked to recall adverbs or verbs we might have concluded that the EMR child's problems are related to deficient memory processes.

We note further how the deep structure of language might possibly interact with a child's cognitive organization. Children displaying concrete modes of thinking may have greater difficulty in learning verbs, adverbs, and other linguistic forms whose referents are abstract in nature. Or perhaps it is as plausible to contend that children whose linguistic organization contains fewer verbs, adverbs, etc. and/or relatively primi-

tive grammatical competence are also limited in the degree of abstract thinking they can attain.

APPLIED LANGUAGE RESEARCH

Earlier in this presentation it was argued that a focus on language behavior of retarded and/or disadvantaged children may have the advantage of leading to specific educational interventions. Our results of preliminary research appear too tentative to conclude that they are relevant to direct teaching situations. We have nevertheless decided not to wait in our attempts to modify the language behavior of retarded and nonretarded disadvantaged pupils.

We are currently involved in a demonstration research project in which an attempt is being made to improve the language abilities of a group of disadvantaged preschool children. We believe that much of the meaning of an utterance is determined by its syntax. Consider again the sentences, "John hit Mary" and "Mary hit John"—both have identical form-class constituents but only the order of the words differ. The two sentences have entirely different meanings. To appropriately decode the sentences, the child must have the basic grammatical concepts of subject and predicate. Young disadvantaged children are being helped to understand the subject-predicate relationship, main verb and object of a verb phrase, and other configurations defined by linguistic theory as universal and basic to the deep structure of sentences. We are sensitizing children to common syntactic forms in English language usage (i.e., if-then construction, etc.). While our formal evaluation has not yet been completed, the teachers working in the program report positive transfer to the children's natural language habits.

Our orientation to psycholinguistics has possible relevance to the development of effective methods for improving the reading behavior of retarded and/or disadvantaged children. For example, we are currently developing reading materials in which new words are engineered to appear in prescribed contexts which we believe pupils will find easiest to decode. For example, by controlling the associations between words in a sentence and placing new words at the end of high association sentence strings, we feel that the probability of reading a given word correctly can be increased. If the new word is *father*, we might construct a sentence which reads: "The son loves his mother and father." The words *mother, father* and *son* all have high associational strength. The sequential string antecedent to the word *father* assures a high transitional probability that the word "*father*" will end the sentence. The deep structure of the sentence

can be linguistically analyzed to determine if the child has the required linguistic competence to process the sentence.

It should be noted that the associative strength between words in connected discourse is an important determiner of difficulty of reading materials—and is a variable not generally considered by teachers in determining the level of readability of materials. For example, the sentence: "*The man hit the ball*" is probably much easier to read then the sentence: "*The man hit the book*" because *hit-ball* has a greater associative dependency than *hit-book*. Existing readability formulas would rate these two sentences as being equal in reading difficulty. My colleague Sheldon Rosenberg has demonstrated in several studies that associative dependencies between words embedded in sentences have a profound effect on the ability to recall stories and to comprehend the meaning of paragraphs. It is of particular interest to note that paired associate learning in retarded children can be significantly facilitated when the words to be paired are embedded in sentence contexts as opposed to being taught in isolation (Jensen, 1967). The powerful effects of "syntactical mediation" in facilitating learning of retarded children might well be incorporated into the development of reading materials for such children.

LANGUAGE AND COGNITIVE STRATEGIES

We hypothesized that mentally retarded children tend to approach language sequentially and have relatively weak grammatical habits; and that this sequential predominance is precisely the reason for their less adaptive language behavior. It was also implied that language habits may be related to cognition. We are currently engaged in designing a research project to further an understanding of this relationship. Our hypothesis is simple—children who demonstrate a strong bias for sequential strategies in language will reflect this predominance when asked to categorize objects according to a common attribute. Children with relatively well developed grammatical competencies will tend to give superordinate responses when asked to make such similarity transformations. Retarded children, assumed to be sequential strategists, might yield responses like "you eat them," "they grow," etc. when asked, "In what way is an apple, a pear, and a banana (pointing to the objects) alike?" On the other hand, grammatically mature non-retarded children might respond to the same question by saying, "they're all fruits."

It will be recognized that the hierarchical categorization predicted from grammatically mature children results from a transformation of three units (apples, pears, bananas) into a new abstract category (fruits).

This process is analoguous to what the child unconsciously does when he synthesizes red, white, big, hard, etc. into the *adjective* form-class. Upon synthesizing the linguistic units into a single grammatical form-class any unit from that class can be replaced by any other within an appropriate position in a sentence without violating the rules of his grammar. Hence, in the sentence, "The ..... man is in his house" any unit from the adjective class can occur in the blank without violating a grammatical rule. This is a powerful tool and is one, it seems to me, which could logically be a key to cognitive organization as well.

When we view the predictions made for retarded children relative to the nature of similarity transformations they make, we note that their sequential bias leads to a synthesis based upon association with the individual items to be transformed. Hence, the resulting hierarchically formed category is less precise and of a lower order of abstraction (i.e., "you eat them", "they all fall", etc. all refer to the "surface structure" of the units—e.g., the perceptual qualities, the state of the objects in the environment—but do not relate to the non-perceptual abstract "base structure" (e.g., category fruits).

SUMMARY

This paper has attempted to outline some important concepts drawn from contemporary linguistics and psycholinguistics which are currently guiding our language research with retarded and non-retarded disadvantaged children. While the results of several studies were discussed, it is recognized that the views expressed are speculative. It is our intention to continue to be guided by these views as we plan and conduct future research in this area.

REFERENCES

Bateman, Barbara & Wetherell, Janis. Psycholinguistic aspects of mental retardation. *Mental Retardation*, 1965, 3, 8-13.

Bernstein, B. Social structure, language and learning. *Ed. Res.*, 1961, 3, 163-176.

Brown, R. & Berko, Jean. Word association and the acquisition of grammar. *Child Developm.*, 1960, 31, 1-14.

Carroll, J. B. *Language and Thought.* Englewood Cliffs, N. J.: Prentice-Hall, 1964.

Carroll, J. B. *The study of language.* Cambridge: Harvard Univ. Press, 1953.

Chomsky, N. A review of B. F. Skinner's "Verbal Behavior." *Language*, 1959, 35, 26-58.

Heber, R. F. Modifications in the manual on terminology and classification in mental retardation. *Amer. J. ment. Defic.*, 1961, 65, 449.

Jenkins, J. J. & Palermo, D. S. Mediation processes and the acquisition of linquistic structure. In Ursula Bellugi & Brown, R. (eds.), The acquisition of language, *Monogr. Soc. Res. Child Developm.*, 1964, 29, No. 1, 141-169.

Jensen, J. J. Social class and verbal learning. In John P. De Cecco (ed.) *Psychology of language thought and instruction.* New York: Holt, Rinehart, & Winston, 1967, p. 103-117.

Kirk, S. & McCarthy, J. J. The Illinois Test of Psycholinguistic Abilities—an approach to differential diagnosis. *Amer. J. ment. Defic.*, 1961, 66, 399-412.

McNeill, D. On theories of language acquisition. In H. L. Lane (ed.) Studies in Language and Language Behavior, III. An Arbor: Center for Research on Language and Language Behavior, University of Michigan, 1966.

Mowrer, O. *Learning theory and the symbolic processes.* New York: Wiley, 1960.

Osgood, C. E. Motivational dynamics of language behavior. In M. R. Jones (ed.) *Nebraska Symposium on Motivation.* Lincoln, Neb.: University of Nebraska Press, 1957.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. *The measurement of meaning.* Urbana, Ill.: Univer. of Illinois Press, 1957.

Semmel, M. I., Barritt, L. S., Bennett, S. W., & Perfetti, C. A. Grammatical analysis of word association responses of educable mentally retarded and normal children. *Amer. J. ment. Defic.*, In Press.

Semmel, M. I., & Herzog, Beverly G. The effects of grammatical form class on the verbal recall of Negro and Caucasian educable retarded children. In H. L. Lane (ed.) Studies in Language and Language Behavior, III. Ann Arbor: Center for Research on Language and Language Behavior, University of Michigan, 1966.

Weener, P., Barritt, L. S. & Semmel, M. I. A critical evaluation of the Illinois Test of psycholinguistic Abilities. *Except. Children*, 1967, 33, 372-384.

Medical Classification of Disabilities for Educational Purposes—A Critique

FRANCIS E. LORD

Public school classes for handicapped children are roughly 70 years old. However, it has been within the last 40 years that these classes have become a state program in the sense we view developments today. If one considers three types of classes for physically handicapped (deaf, blind, crippled) as a minimum for a state program, then we can say this stage was reached in the twenties in some midwestern and eastern states.

STATES COPIED PLANS

Practices in the first states were copied and applied to other states. What appeared to be a good idea in Michigan soon spread to Ohio. Even the wording of laws in the states resemble each other. Somewhat similar definitions of disabilities were used. So we have arrived at fairly uniform state practices and, along with it, fairly standardized vocabulary. For example, the subgroup referred to as *partially seeing* is a somewhat similar group in state practices. In this case a definition of the disability as set forth in the National Society for Prevention of Blindness has dominated our practices for 40 years. I am stressing the point that we have established fairly rigid grouping of children and I wish to imply now and explain later, that many of these labels are not very descriptive of the children in these groups as we find them today.

Also, states copied from each other the method of support used in fiancing special classes. The general principle of extra state compensation for districts which operated such classes became established very early—perhaps with our first classes at the turn of the century. No doubt this practice of finance was easy to establish since states at that time were accustomed to paying for education for children who were sent to residential schools. The state had already agreed to assuming an extra financial burden for such children. Financing, like most other practices in the field, was directly related to our labels or disability categories.

The establishment of state support for special classes naturally brought with it the question of eligibility for admission to the class. The state

wanted to be sure that all money was spent upon children who really needed the service. Hence, we find our legal definitions of disabilities and the well defined laws relating to eligibility for admission to special classes. These definitions and the stated or implied admission standards became fairly uniform throughout the country. States contemplating legislation read the laws of other states and essentially incorporated the same provision in their proposals. Again the eligibility standards were tied to rather rigid disability categories. A child had to be "in the category" to get services.

Almost from the beginning of state programs in special education, laws were enacted to regulate the requirements relating to teacher preparation. With few exceptions, separate requirements were set up for each of the categories of children. In the early 20's it was clear that credential patterns would be directly related to type of special education classes. Today California, like most other states, prescribes a somewhat separate set of course requirements for each special education program. California has five separate education minors under the new credential pattern. Two special groups have escaped the credential pattern—gifted, and educationally handicapped. We will come back later to some suggestions relating to teacher preparation.

—FEDERAL GOVERNMENT FOLLOWS SUIT—

Recent Federal legislation which provides support for teacher training programs again are based upon our traditional categories and will be another force to perpetuate our structuring of the field. Today you don't get Federal funds for training teachers unless you can demonstrate, that you have a highly specialized program of preparation for the particular category for which you are requesting support. This practice is understandable and a device to control the intent of legislation but it does leave us with another influence which contributes to the structuring of our field. A creative program which departs from tradition would not get support. How do growth and new practices become established under such regulations?

—A CLASS FOR EACH GROUP—

In the past, we were very particular about keeping our disability group separated in the school program. For example, blind and partially seeing children had separate programs according to the official plans. In practice there was often some mixing, however. One can question the wisdom of such separation especially in the smaller program. It seems obvious that

an able resource teacher could handle a variety of special needs of children with varying degrees of visual limitations.

During the past 50 years we have learned a great deal about handicapped conditions of children. Let's look at some illustrations of how we increased our knowledge of children.

The cerebral palsied child is a good example. The medical subclassifications themselves are relatively new and in recent years new medical subgroups have been differentiated. The medical men who identified some of these subgroups are still active in the field.

At the level of classroom problems, we also have learned a lot about education and management. Elaborate teaching procedures have been developed to meet a variety of special needs. So we have made great progress in our knowledge of the CP child and how to serve him.

During the past 40 years we have admitted to the school thousands of cerebral palsied children who would have been excluded 25 years ago because no one knew enough about them to provide a training program. Special education teachers deserve much of the credit for this advance.

A second example of how we have grown in understanding of a disability may be drawn from the increase in the flexibility found in our administrative approaches within the school. For example, the evolution of services for some children from special classes to resource rooms to itinerant teaching is traceable in part to a development of a more realistic insight into the exact nature and needs of the child. We know these children can compete with normal children when they are given appropriate assistance.

ADEQUACY OF GROUP MEDICAL LABELS

Let's examine our categories (or group labels) we are using currently. We tend to use these labels as if they describe a group of children which have significant identical features from an instructional point of view. Look first at the group or classification commonly referred to as *crippled children*. Now we have an exceedingly heterogeneous group of children hiding under this label. Even the crippling condition itself varies greatly from child to child. For a child to have an impaired limb is quite different from having two useless arms. To have a seriously impaired speech as a component in the crippling complex is more significant than many other limitations that may be present. Certainly serious congenital disabilities are more significant than the group of acquired disabilities which respond readily to treatment. Now, to add further to the point being made, note that most disabilities found in the other categories

(deafness, visual impairment, retardation) are common among crippled children. So we see the group label never describes the complex of educational problems which characterize the groups.

Let's take another group label: the deaf. On the surface this sounds like a very descriptive term. But when one examines the children in the subgroup, again one finds a heterogeneous lot.

The category of children with visual impairements has always been subdivided into blind and partially seeing. But these terms have taken on new meaning as we worked with visually impaired children and learned a great deal about them. The 20/200 upper limit of visual acuity has been the practice for years for determining eligibility to special classes. We have known for a long time that these were serious limitations in the use of the arbitray visual acuity rating. Visual acuity tells very little about a given child's performance in the classroom. We now know, for example, that about 80 per cent of so called blind children are able to read print in school. Of course, the actual amount of print reading done and the circumstances required for reading varies greatly with individual children.

These observations are so obvious that we need not dwell on them further. All teachers of handicapped children live with and work with a complex of disabilities regarding his (her) assignment. These observations are not discouraging to teachers. They know the facts of life and go about their work with strong motivation and show remarkable aptitude for handling a complex teaching assignment.

By way of summary, we can make the following observations:

1. Our categories are largely medical groupings which resulted from the practice of certifying the disability and controlling administration to fulfill legal requirements.
2. Reimbursement practices have tended to use these labels as a device for controlling instructional practices. Administratively the use of group categories is a very helpful tool.
3. On the other hand, we have learned so much about each disability group that we now see the educational limitations of the group labels we have inherited.

—SOME NEWER MODELS—

Now let's turn to the other side of the question what does the future hold for the common labels of the past?

Perhaps one should point out first that most special education teachers really never let the labels get in their way too much. They tended to

treat the needs of each child and recognized that these needs varied. They recognized that handicapping is often a complex of limiting conditions and these conditions vary among cases. Consequently, they have adjusted their instructional programs accordingly. There are, however, some interesting signs of change on the horizon. Fortunately, special education is too new a field to become too rigid. We are always prepared for something different. The array of problems we deal with helps to keep us alive professionally.

You have noted that a new grouping of children has appeared lately under the label *learning disabilities*. This is a nice flexible label which comes to us from psychology and education. It is not a medical classification like most of our others. It really doesn't tell us what is wrong with the child, it merely says he has a problem in the area of learning. This label is coming to be used to encompass a variety of problems which are not related to retardation or to cultural deprivation. The term itself (learning disability) seems to be useful in describing a cluster of problems which are clearly recognized by teachers and others who work with children. There is little doubt that the label will prove useful and will continue to take its place along side our other terminology.

California has recently employed the term educational handicapped to refer to children who roughly belong to either of two early established categories-Emotionally Disturbed and Neurologically Impaired. Now again this term (E/H) departs from the medical categories which were developed for the physically handicapped.

One can go back 25 years and note the origin of the term "brain injured." While this term has definite neurological implications it was, however, a term which was related to a definite learning and behavior syndrome. The term when properly applied connoted definite problems of learning and adjustment. In this sense, it was somewhat more descriptive than our older labels.

So perhaps our language is changing and we are gradually acquiring terms which are somewhat more revealing, more descriptive of the child's limitations.

—LOOK TO THE FUTURE—

Let's look to the future and predict how we will structure our field, and how we will view our roles as educators of the handicapped. There are a number of implications—perhaps predications—we can draw from the 50 years of experience with handicapped children in our public schools.

2

Implication 1.

Teacher preparation must be broadened to include a better knowledge of all the disabilities one finds in each major category.

Teachers of crippled children must know more about retardation, brain injury, emotional problems, speech problems, etc. Teachers of the deaf must be prepared to deal with problems relating to retardation, emotional adjustment, visual impairments.

Speech correctionists must be prepared to deal with the multitude of related problems they encounter in children such as retardation, emotional adjustment, giftedness.

All special teachers need a stronger foundation in the nature and instructional implications of all the major disabilities.

Certainly the rigid credential structure must be reviewed to determine whether the required training is really adequate for the types of classroom problems teachers actually encounter.

Implication 2.

Our broader categories such as "learning disabilities" may in time absorb some of the other disability groups. We may even arrive at three of four groupings such as: Intellectual Retardation, Communication Disorders, Learning Disabilities, Visual Impairments.

Implication 3.

It is possible that public schools which service handicapped children will in the future be less concerned with the medical diagnosis as a basis for classifying children and be more interested in grouping children in terms of specific educational and remedial needs. For example a school for crippled children, as we now know it, might be organized around special services to the children. The school would be a service centered school. Then the children would be scheduled into services in accordance with their needs. If such an organization prevailed in an institutional center, the center could readily accept any child who could find within the array of services a combination which might assist him in his habilitation. Now the services would be very functional and all would be manned for high level instruction and/or remedial services. This cafeteria of services would need to be defined in terms of the special developmental needs of the children.

The approach suggested, as you may recognize, parallels that of a rehabilitation center in that the client comes with a set of well defined needs and in turn gets a specific combination of individual services. The center just faces up to the specific needs of the children and organizes itself in terms of these needs.

Yesterday Was Tuesday: Issues In Language Instruction For The Severely Mentally Retarded

MAY V. SEAGOE

The past twenty years have brought a revolution in life style for the severely mentally retarded. From a place hidden within the family circle, or institutionalized at an early age, they have moved into public day schools. From a life without work, they have moved into sheltered workshops. Their parents have moved from a sense of hopelessness to a knowledge that a better way of living is open to their children.

Much of the change has come through the outreach of compulsory education to include the handicapped, aided by an affluent society, expressing a deep humanitarian feeling in our culture. Much of it has come through painstaking study, in medicine and psychology and sociology as well as in education.

Yet some of the change has come through dramatic incidents, pioneering by dedicated teachers without knowledge of the significance of what they were doing. So it was with Anne Sullivan, the teacher of Helen Keller. So, too, it was with Paul.

THE CASE OF PAUL[1]

Paul was mongoloid. His tiny blue eyes were oblique and narrow, with epicanthal folds that gave them a slanting appearance. He was quick and agile, almost double-jointed. Yet he was curiously awkward, with broad hands, stumpy fingers, and a little finger that turned in strangely. There were heavy creases in the palms of his hands and the soles of his feet. His small round head, set on a short neck, was covered with dry blond hair. His ears toed out, his nose was flat. His thick lips made it difficult to keep his large, flabby, deeply creased tongue from protruding. When he spoke, his voice was harsh and explosive. During the first year, a renowned physician gave the diagnosis, "Down's syndrome." That diagnosis was confirmed by other physicians in later life. It was never questioned.

---

[1] Adapted from Seagoe, May V., *Yesterday Was Tuesday, All Day and All Night: The Story of a Unique Education.* Boston: Little Brown and Co., 1964.

Paul's development followed the predicted pattern. He made no attempt to walk until he was more than two years old. He had great difficulty learning to feed himself. He could not talk intelligibly at the age of six. He lived in his own apartment with a graduate nurse as his companion.

The degree of retardation was never adequately assessed during childhood because of his family's attitude, and because the retardation was so apparent. From time to time, a number of tests were given (see Table I). They showed verbal ability in the low sixties, performance scores in the forties, and somewhat lower ability to learn new material. Checking the test results with his physicians and tutors brought confirmation that Paul's lifelong level of functioning seemed to be at about the level tested at maturity, from 55 to 65 in verbal ability, and somewhat lower in performance potential.

TABLE I
TESTS OF INTELLIGENCE

Age	Test		IQ
43	Wechsler Adult Intelligence Scale:	Verbal	64
		Performance	46
		Full Scale	54
44	Wechsler Adult Intelligence Scale:	Verbal	63
		Performance	48
		Full Scale	54
	Wechsler Memory Scale:	Memory Quotient	40
45	Porteus Maze Test:	M.A. 4½ Years: estimate	30
46	Stanford-Binet, Form M:	M.A. 6-8, Basal V, Terminal IX	44

From "Verbal Development in a Mongoloid," *Exceptional Children*, 31, 270-275, 1965.

Paul was typical of mongoloids in the higher range of intelligence. The distinguishing factor came from his family situation. His early childhood saw every physical care combined with warm mothering. In addition, the drowning of an older brother focused his father's strong sense of family responsibility on Paul, the only remaining son. At six, when his father and mother were divorced, Paul became the center of his father's life, a life henceforth dedicated to giving Paul every advantage.

Giving every advantage meant that Paul must learn to read. His father visited clinics, university experimental centers, and pioneering schools to ask for help. Finally he found help in Helen Bass Keller, who

had developed the remedial reading center that was the forerunner of the present Psychology Clinic School of the University of California, Los Angeles. Mrs. Keller and Dr. Fernald had developed their well-known kinesthetic method of teaching non-readers, and Paul's father asked that his son, now nearly seven years of age, be enrolled.

It was clear that Paul was severely retarded, not a non-reader. But Mrs. Keller agreed to see Paul privately in order to figure out what kind of instruction he needed. At first, Paul could not talk intelligibly, or control his arm movements enough to write on the blackboard, or focus his attention enough to follow instruction. Mrs. Keller rented a room, removed from it all distracting objects, and began through action to teach Paul to speak. Soon he was fitting "I caught the ball" to the act, then "I threw the ball," then "I rolled the ball." Drawing was also part of the initial instruction. A self-portrait was one of his earliest attempts. The problem of control was apparent. A crossing of the eyes could be seen and what is sometimes called the schizophrenic flip in terms of the representation of the nose. Yet there was a very clear representation of a face. As his speech improved, Paul verbalized what he was doing while Mrs. Keller drew pictures. Whenever he used a new word, she repeated it over and over again. Soon she began writing his new words on the board, and from that point reading and writing accompanied speech. She typed his stories, and he read them to her. He also learned counting and simple arithmetic.

The beginning lessons occurred three times a week for nearly a year. Then, at Mrs. Keller's suggestion, Paul's father employed a tutor (Miss Chipman for most of his life) to live with the family and undertake twenty-four hour instruction under Mrs. Keller's supervision. Because Paul's father traveled widely, letters and diaries of trips began to replace the earlier forms of instruction. Paul taught himself to type, and the typewriter became his constant companion. Instruction turned from word recognition and writing to comprehension and attempts at silent reading. Those were more difficult.

The principles used in teaching Paul may be summarized simply. Provide every physical care, remedy all defects that can be corrected. Simplify the environment so that he can touch and handle and work with anything he wishes. Appeal to his sense of touch and movement rather than teaching through visual cues alone. Give his concrete experiences as background for everything you try to teach. Base reading and writing on play and travel and events that interest him. Cultivate his alertness, make observations, ask of him only what he can do with rea-

sonable effort. Teach him to write words as a key to reading them. Ignore mistakes, but keep coming back with something he can do. Repeat again and again until he learns. Let little things that really do not make much difference pass without correction. Follow his interests and build on them. Improvise material; take advantage of every situation for learning. Vary experiences to hold interest and to get new learning. Always relate the experience to the concept and its symbols. Encourage, praise him for good work. Build a routine that is efficient and follow it. Talk constantly; listen, explain and interpret, let him understand. Do not force new learning, but demonstrate and let him discover for himself. Supervise him constantly. Above all, treat him as a person, with feelings and abilities and rights, no matter how limited his mental ability may be. Include him in everything, welcome him, enjoy him as he is.

Keeping a diary became a part of Paul's way of life. They are complete with few omissions from the age of twelve to his residential placement at forty-three. They not only tell the story of his language development but also show Paul as a person. They constitute the first inside look at severe mental retardation.

Let us pick up the story of Paul's development from his diaries themselves. Illustrative of those written during his adolescence are the following in chronological order from twelve to twenty-one.

Continental Divide. It was a wonderful sight. I saw snow, deep valleys and waterfalls, threw stones.

The Wind Caves. South Dakota. They were not as pretty as the Jenolan Caves in Australia.

I fed lumps of sugar to my donkey. I went on the new trail. My donkey refused to go down the stone steps. I walked down and my Dad led him. My Dad had a switch to switch the poor little donkey. The donkey ate the switch.

My Dad and I went to the State Fair. I went to the auto race. I saw the livestock. I had a merry-go-round ride to I got lost.

It was April Fool's Day. I fooled my Pop. I fooled the man at the cafeteria. It was a hot noon. I drank my grapefruit juice in the bath tub full of water.

At Portland is the nicest apartment I ever had. I pushed the button upstairs and it opened the entrance door down stairs. I could phone to Miss Chipman and my Pop from the vestibule.

Miss Chipman and I got our lunches every day. One day the box of matches was standing on top of the hot oven. The matches ignited. The broom, napkin, dish towel and the top of the table burned. Then the firemen came.

My Pop and I found a new trail. We dropped confetti to mark the trail. It was not a success. The wind blew it away.

My Pop and Miss Chipman and I went out last night. We went to Alki Beach. I carried the apartment key in my shirt pocket. I lost it in the sand. I found it.

I went up Telegraph Hill and to the Twin Peaks to get a view of city of San Francisco in the moonlight night. It made me think of my old home in the East. After supper Miss Chipsy and Buddy went to the apartment. Commander Bud Scott and Queen Chipman and Buddy went to the apartment. Commander Bud Scott and Queen Chipman slipped the note under the door.

Dear Miss Chipman.
Go away with me.
Love,
Bud.

I rolled the new Seal-O-Mate inner tube up to the manager to see it. I rolled it up the steps to one, two, three, four floors. I came in 421. I rang the door bell. I came in. I went in the bathroom. I closed and locked the door. I turned on the hot and cold water, and I turned off the water and I put down the rug. I raised the tube in and I unlocked the door. I called my nice Pop and Miss Chipman to see the leak.

Fleur my girl came to see me. She made a trip around the world. She lives in West Australia.

I packed my clothes for the trip. I packed my rain hat. I am sorry I put it in the storage warehouse in Los Angeles!

I ran up the street to Jako's house. I took Jako's hand and we ran to the back door. Jako told me he was a Negro.

Miss Rip Toad and I went shopping. I got a tie and socks: Miss Rap Rap got a new blouse. We went to the .10 store. I got a shopping bag. This is the end.

I sailed to the beach in a sail boat. The canvas sail shooch in the high, high, high, high wind. I hopped off the high pier and I made a high dive into the water and I swam.

I went to hear the lecture: I went to the house: I showed our friend my pictures in my book of travels: I said adios to our friend, wahoo: in, wahoo: I turned in.

I went over the road. Pop went to see tires and got stuck in the sand. Senor Pop stayed with the Chevy and Senor Paul went to the fishing boat. I went on it and I found fishermen senors in boots, coat and hat and Senor Paul led the senors to the Chevy and push and push and push and push and out comes the Chevy.

I had a rough sea on the boat. The sky was cloudy. I went to the lounge. I heard a lecture on Denmark. After tiffin the boat gave a roll. The furniture went around. The bass drum bust, the dishes did not go on the floor. The table had racks up. The ashtrays rolled. I went to my nice dear bed.

Last night we took the sleeper for Polish frontier. The countryside from Moscow to Polish frontier en route to Moscow is like a neglected cemetery. The houses are tumbling down and there is

little agricultural activity. This cold morning it was not an uncommon sight to see peasants and their children barefooted with overcoats on. Women wait and cook food in railroad depots. The general employment of women in manual work is to let men enter the enormous Russian military service. . . . Just before we reached the frontier we saw large military stock houses. Pop removed his Russian diary notes from my book to avoid trouble at the border, which was lucky as diary was inspected entering Poland. The Polish officers confiscated Pop's Soviet paper translated in English. . . .

In the morning we went to the doctor's office for my ears; then to the lawyer's office;

Paul's diaries and his style of writing had reached their full development by the age of twenty-one. He continued in much the same way until the age of twenty-five.

I had the bat and Pop had the ball: we went back of the convent school: I went to the wall and Pop went to the backstop made of wire: I gave the bat a swing and hit the ball: the ball went through the basket and lucky ball to do it: the ball went to bounce on the ground and to land on the top of the bench: the ball hit the side of the basket: the ball went into the back street: the end of the game:

I went to look for an apartment for my aunt: I went run away: I pulled the fire alarm box: Aloha:

The Chevy had a spin on Daytona Beach. Miss Chip and Mr. Paul went to have a hike to the book store to get Time for Chip. I got Life for Mr. Paul. The rain did pour and I jumped through the hotel open window.

I saw dartmouth college at hanover new hampshire; I saw the football field; I saw the hockey rink; I went to the library to see the hideous paintings by a nitwit meximan painter; mr pop had a hard time to find mr brother clinton ;mr pop got the dogs out of the vermont jail and new york jail; the 3rd day he came up and he was dead and went to get him in the grave;

On the Train I Went To The Non-denominational Services: I Saw The Country; Was Interesting And A Big Wilderness: I Saw The Indians: The Indian Squaws Had On Pants: I Saw The Great Nelson River: I Saw The Famous Kettle Current: I Saw The Northern Lights:

Mr. Pop And I Went To Santa Barbara California: I Went To Montecito To See Where Miss Mama Scott Died: I Went Along The Beach: I Saw Houses With Blue Roofs White Sides and Red Flower Boxes: It Was The Same In Amsterdam Holland When I Saw It Before The War:

Easter Day: I Went To Church: Mr. Pop Read Me The Travel Books

Just before his twenty-fifth birthday Paul's whole life changed. He lost his beloved Mr. Pop in a sudden, fatal heart attack. Miss Chips

knew he must be made to comprehend what had happende. He visited the mortuary, asked "Is that my Pop?" Tiptoed behind the casket and lightly kissed the still forehead. He did not go to the funeral, but visited the cemetery the following day. He saw the mound of new earth near the grave of his brother. He threw himself down and kissed the grave, knelt, and prayed, "God, take me too."

For two years he grieved, crying repeatedly and mourning over his father's picture. Miss Chips grieved with him and for him, and helped him meet his loss as best she could. The verbal output in his diaries increased, a token of the linkage between Mr. Pop and Paul's writing achievement.

The pattern of his life changed. He stayed on with Miss Chips, but there were no more long trips. Brief excursions, railway stations, car licenses, his travel books were all nostalgic reminders of his earlier life. Then, with the outbreak of World War II, even that limited travel was curtailed. But the writing went on.

I had supper at Van de Camp's in Eagle Rock where my aunt and I walked when Mr Pop was alive: This is my first time to see Mr Pop died

I went to the athletic club to tell them Mr Pop died: I went to the newsreel theater to tell the girl about Mr Pop dying:

We were invited to a friends apartment for dinner: Had tongue: First time I even tasted it: Then we heard the air raid signal: All lights were put out: We stood on the porch and watched Los Angeles California grow blacker and blacker: Finally there was complete darkness: This is my first experience in a blackout: I lay down on the davenport for a little snooze with Chip close to me: After it was over our friend took us home: She lighted A candle: She showed me motion pictures of Bali Death Valley and Switzerland: The projector made too much light so we stopped:
Home: Bed

Got the streamliner going to Glendale: We sat up in front so I could watch the motorman: No. 3 car was crowded so I sat with a gentleman who said he was with Barnum and Bailey-Ringling Brothers Circus: He was in Alaska and I told him I had been there too: Also in Egypt and New York:

Just as I was ready for bed Miss Alida turned on the radio for 9 o'clock news and all programs were off: Then we heard from outside "All Lights Out:" We quickly turned off our lights as we were in a blackout: It lasted from 9 o'clock to 11 o'clock: Miss Alida and I went to bed: My clock showed plainly in the dark: No blackout for it:

While Miss Alida was down town in the morning she bought a magnifying glass for me: It works fiine.

Our Train Left At 8:30 p.m. On The Train Saw The Licenses With My Binoculars:

We drove To Pasadena: We Drove Home And Missed The Cut-Off And Got Way Down Town But Alida Went Bravely Through The Traffic:

Paul needed more in his life than most people. Magnifying glass and binoculars helped see the old through new eyes. Short train and streetcar trips, watching trains and spotting out-of-state licenses, seeing travel lectures, listening to the news all helped to recall his own travels. Playing with typography, from his own archie and mehitabel style to his neo-Germanic style to a Western Union variety helped a little. But they were not enough.

When he was twenty-eight he wanted to learn Spanish. Miss Chips let him pick up what he could, but there was no formal instruction. Much of his "Spanish" was of his own invention, but a vocabulary count showed more than 800 bona fide Spanish words used in his diaries over the next four years. The typography for Spanish went through the same permutations of style as English had earlier.

Walkedo To El Cuidad Hallo Whereo Alidaia Got A Cinco Pesos For Goingo Througho A Rojo Lampara:

La Alidaia Tooko Nos To Inglesia En Carro: La Alidaia Dido Noto Comeo Blanco: Shea's Takingo Hera Vacacion: La Tia Y Yo Hado Dinnero Ato Blanco: Listenedo To El Newso: Theno Wento To La Cama: Don Pablo Dido Noto Dormir Bonito: Walkedo En Hiso Dormir:

El Martes Waso Ayer Todo Hoy De La Noche: Hoy Estoy El Miercoles: . . .

Desayuno con El Tren. El Pato corto En el Estacion. Alumergo Ato El Efifa Calo De Marshall in mesa El libre. to Museumia. To El Nevas Re El Treate. Spento several Horas En Estacion watchingo los Trenes Througho En los Portas.

Wes todo venee to airport de los angeles, wee sawo el clippero americano, grande, airplano holdingo sesenta posannes, yo did noto tomar el sacko aso senorita quree me to, could noto stayo to veo airplane tomar offo, la cama, buenas noches.

After my nap we played games of croquet. 9 o'clock news. Bed. Good night.

So ended the "Spanish" period, abruptly. When he was finished, he was finished, whether it was Spanish, or a piccolo which he threw out the window, or the beloved illuminated globe which he took to the incinerator. He eliminated the old to make room for the new.

From the age of thirty-four to forty-two, Paul's life settled down to a routine of breakfast, writing his diary, typing and reading, lunch, then an excursion of some sort. Television was added. His writing

deteriorated with the decreased stimulation of the new, and with his growing frustration. Running away became a problem, seeking his old home in the East and his sisters.

> Buster is 34 years old. Went to Farmer's Market. Got chocolate birthday cake "Happy Birthday Buster" and Farmer's Market ice cream. Then to Theater and saw "My Friend Irma goes West." Murchison House for supper and Broadcast and Glen Hardy.
>
> Went to Los Angeles Airport and watched Alida take off to Minnesota and Tuesday Corona writing Tuesday Hoffman television Tuesday broadcast Tuesday news. Sky rocket whizzes 1500 miles. Goodby Tuesday.
>
> Went to park on Wilshire and study each steering wheel and out of state licenses.
>
> Goodby month of the turkey.
>
> Hello month of Santa Claus.
>
> Officer Paul Scott, Philadelphia Police Department, Philadelphia, Pennsylvania
>
> New week. And I went to the United Airlines and try so hard, but plane goes to Sacramento, California

Finally the constant supervision became too much for Miss Chips, and Paul was placed in a private residential school at the age of forty-three. His adjustment was difficult, as a letter within two weeks showed:

> *On Monday. . . I am going to Philadelphia. I do not like to be at school. I had enough of this school. What is the matter with Alida to take Mr. Paul Scott here. I do not like many gentlemen here including the teachers. I am going to Philadelphia.*
>
> *My father, Mr. Clinton Scott, wants Mr. Paul not to live my rotton life in school in the country. Iw ant to live with you (my sister). I will never leave Philadelphia, Pennsylvania, never again. This morning I am homesick. Sunday evening I cried so hard and prayed so earnest to Jesus Christ. Never leave Philadelphia, never. I want to spend my new future life in Philadelphia, Pennsylvania.*

He ran away from the school, pretended deafness until examination punctured that defense, clowned and jubed at examiners until they requested psychiatric examination, refused cooperation on tests. Miss Chips took him on brief trips to favorite places several times a year. But at school he spent his time watching television and taking notes on the available books. Finally, after two years, he made peace with his new environment. But it was peace on his own non-cooperative terms. He stopped writing except for letters, and told Miss Chips stop sending him books. There was no one to whom he could talk about reading or about intellectual interests.

So his life went until, at the age of forty-seven, Paul died suddenly of

internal hemorrhaging from scar tissue left from an old ulcer of which no one had been aware.

ANALYSIS OF ISSUES

So we come to the question of what Paul's unique history means in terms of understanding severely mentally retarded children. First let us examine his life as a whole.

It is clear that a severely mentally retarded child is capable of living as a valued member of an understanding and affectionate family well into adulthood. He can develop a life style that fits into that of intelligent adults, though always at a child's level. He can make his own contribution to the adults through affection, and through the sense of being needed that is essential to parents and parent substitutes.

It is clear, too, that a severely mentally retarded child is a person, with all the feelings and characteristics of normal children. He is capable of great affection, not only for parents but also for other adults who share his life. He grieves for them when they die; he is lonely when they are away. He has a sense of the joy of living, and he feels deep frustration when his activities are limited. He can be deeply religious. He can develop a sense of humor, at times facetious. He can develop his own defenses against frustration, from not hearing to running away. He can dream of escape, and try to implement his dreams. He can be creative in his own way, through inventing language or reforming the English language.

He can not only learn language skills and specific facts, but also make comparisons that reflect some degree of concept formation. His one critical limitation lies in making judgments. He cannot grasp complex situations well enough to reach decisions, whether they be about jumping out of hotel windows or finding the right plane to take him where he wants to go.

Because he cannot make judgments, lifelong supervision is essential. When his parents and adult friends are no longer able to provide the supervision, residential or foster home placement is inevitable. For a severely mentally retarded individual who lives into middle life in his own home, that placement requires severe adjustment. Yet it is an adjustment that can be satisfactorily made over a period of time if the childhood roots in acceptance and self-confidence are strong.

Let us turn more specifically to language development. The literature shows a maximum reading grade placement for such children of fourth

grade, a level quickly lost. The usual recommendation is therefore that children with intelligence quotients in the fifties start reading at age ten to twelve, with a maximum at maturity of first to third grade achievement. Paul began reading at seven. He recognized over 200 words when he was eight. He tested well above third grade on all four Gates tests (comprehension as well as word recognition) when he was fourteen. He tested at seventh grade or higher at maturity. When he was placed in a residential center, at the age of forty-three, his grade placement on the Wide Range Achievement Test in Word Reading was still 7.8.

As for writing, a number of types of analysis of the diaries were made.[2] A random sampling of ten diaries for each of eleven years, spread at intervals of two to four years from the age of thirteen to forty-one, was analyzed. The results appear in Table II. They show a rise to approximately age twenty-five in verbal output, vocabulary, word and sentence length, and difficulty of comprehension. The results for age twenty-one are omitted because of internal evidence of copying. That level was maintained to age thirty-five, followed by deterioration to the point of residential placement.

A second analysis used a modified Q sort with the same diary samples. Twenty-three supervising teachers were asked to judge the grade level of the diary samples, which had been randomized in terms of chronological order. The judgments again reflected the gain in writing ability to maturity, and the deterioration after age thirty-five. Most significantly, they indicated a quality of writing at maturity equal to that of the average seventh grade child.

The third analysis was done by John R. Parks as part of a study to computerize the study of style. Rank-frequency tables of a sample of 5,000 running words were made from the diary entries for age twenty-four. The nearest comparable style data was that for oral spech in a possibly gifted five-year-old girl. There were, however, significant differences between the two styles in that Paul combined high redundancy for words of low rank with high selectivity for words of high rank. As a result, a modification of Mandelbrodt's equation specifically for the mongoloid data was proposed.

It is clear, then that a severely mentally retarded child can, under optimal conditions, learn to read and write at a minimal adult level. It is also clear that he will retain those skills well into adulthood if his

---

[2] For a fuller presentation, see "Verbal Development in a Mongoloid," *Exceptional Children*, 31, 270-275, 1965.

TABLE II

STATISTICAL ANALYSIS OF TEN DIARY ENTRIES PER YEAR

	Age											
	13	15	17	19	21	24	26	29	33	37	41	Average
Verbal output	14.9	33.7	36.8	35.5	66.4	68.1	72.9	61.2	42.1	40.8	27.7	45.42
Vocabulary	8.9	16.0	17.5	17.4	35.2	24.0	30.9	23.6	21.0	21.9	16.1	21.14
Verbs per entry	2.7	5.2	5.0	4.8	7.5	9.7	10.5		6.2	2.3	0.6	5.45
Adjective per entry	3.7	4.6	7.6	7.9	12.2	11.0	10.4		5.0	2.0	2.1	6.65
Verb/adjective ratio	.73	1.13	.66	.61	.61	.88	1.01		1.24	1.15	.29	.831
First person pronouns per entry	1.8	5.0	4.0	4.0	1.1	7.7	1.9		1.2	0.0	0.0	2.67
Self-reference index	.12	.15	.11	.11	.02	.11	.03		.03	.00	.00	.063
Average syllables per word	1.23	1.35	1.31	1.30	1.63	1.26	1.19		1.18	1.71	2.02	1.418
Average words per sentence	6.25	7.14	8.33	7.14	12.50	6.25	6.25		7.62	4.17	4.76	7.041
Flesch readability index	95.9	84.8	87.0	89.1	55.5	93.4	99.3		98.8	57.2	30.3	79.1
Flesch category	ve	e	e	e	fd	ve	ve		ve	fd	d	fe

ve	Very Easy
e	Easy
fe	Fairly Easy
d	Difficult
fd	Fairly Difficult

life plan includes their use. The questions have to do, not with whether such achievement is possible, but whether it is desirable. That is a much more difficult query.

With all of the appropriate qualifications about the nature of the data, the feasability under less than optimal conditions, and the hazards of generalizing from a single case, let us examine some of the inferences that come to mind from the story of Paul.

In the first place, it might be well to re-examine our assumptions ragarding the ability of severely mentally retarded children to learn to read and write, and the point at which reading and writing should be introduced. Mongoloids are slow in developing speech because of excessive tongue size and malformations of the mouth. Perhaps speech need not precede reading and writing. Perhaps, as with the deaf, learning to read and write would accompany learning speech, thus enhancing both.

Second, it may be that we should re-examine our methods of teaching reading and writing to the severely mentally retarded. Kinesthetic reinforcement in presentation, individualized instruction, and content built on personal experience might greatly extend the upper limits of learning. Kirk[3] early demonstrated that kinesthetic reinforcement aided retention. O'Connor and Hermelin have shown that systematic attention to vocabulary development pays off.[4] With the improvement of other aspects of method, both initial learning and recall might be significantly increased.

In the third place it may be crucial for retention that we press our efforts until at least the fifth grade level in proficiency is reached. Only then can such skills effectively be used in adult life. Minimal levels for general reading material, whether newspapers or TV guides or instructions or advertisements or letters, lie in the fifth to sixth grade range. Reading proficiency below that level will inevitably be quickly lost, because it cannot function. By following through, from third to a fifth grade proficiency, we may make the difference between a stable functional level of language use and loss of the whole language development.

Finally, we should re-examine our assumption that the probable adult milieu of the severely mentally retarded will require little or no reading skill. When most adult mentally retarded children were assigned to

---

[3] Samuel A. Kirk, "The Effects of Remedial Reading on the Educational Progress and Personality Adjustment of High-Grade Mentally Deficient Problem Children: Ten Case Studies," *Journal of Juvenile Research*, 18, 140-162, 1934.

[4] N. O'Connor and Beate Hermelin. *Speech and Thought in Severe Subnormality: An Experimental Study*. New York, Macmillan Company, 1963.

institutions, that assumption was usually tenable, as Paul's experience shows. Yet even then there were individuals for whom careful social case study would have predicted a life under the parental roof in the normal community well into adulthood. Now, with the emphasis on foster home placement in otherwise normal communities, the situation changes. A mentally retarded child, whether working in a sheltered workshop or simply living at home, has access to reading materials and to adult conversation far beyond that available when he is placed in an institution with other mentally retarded individuals. He also has a greater need to read in the course of daily living, a need heightened if he lives in a family of intellectual interests. His very life circumstances, then, make language skills continuously available, as well as more important than they have previously been.

In conclusion, I should like to acknowledge my indebtedness to Paul's first teacher, the designer of his education, the friend to whom Paul gave his diaries when he was placed in a residential center; who saw the significance of his story for others; supervisor emeritus of the University of California, Los Angeles; teacher extraordinary, whose dedication to the potential in every child helped Paul to find his own, Helen Bass Keller.

A Profession In A Hurry: The Need for Standards

MAYNARD C. REYNOLDS

In just the past score of years enough has occurred in the field of special education to fill any ordinary century. Like the stock market for the same period, the curve of development has slanted upwards most of the time and continues to do so. A key problem, of course, is to determine which parts of this crowded history represent progress and which parts show mere "scurrying about." It is safe to predict that future historians will tell of a mixture of real progress along with large regions of gap and failure.

ASPECTS OF THE HURRIED DEVELOPMENTS

The hurried developments of the recent past are sometimes counted by the number of teachers employed. In most States, the number of teachers and other specialists employed to serve exceptional children has doubled and often trebled in just the past decade. Recruiting candidates for these many positions and developing the college programs for preparing them have been difficult problems everywhere.

Progress is meeting the recruitment problem has been very uneven among the various States and localities. In some colleges, students by the dozens and scores come specifically for special education preparation and flow through well-designed four and five year training programs. In other localities, special education is the collecting place for teachers on emergency "permits" or those who have minimum level, Summer-only preparation. Differences in recruitment effectiveness are very striking and seem correlated with the general quality of leadership in special education, and with demographic, geographic and financial factors. In the very best situations, it appears that State-wide organizations such as CEC Federations, have been active in recruitment activities and that colleges have made their special education programs highly visible and attractive in various ways, but especially through laboratory schools.

Colleges and universities have experienced great difficulty in taking up their responsibilities to offer pre-service preparation for the needed

specialists, but the pace of progress has been hastened in the past two years with federal supports under Public Law 88-164. The field of mental retardation had been given a head start through a federally-supported leadership training program in education authorized by the 85th Congress. Nevertheless, the patchwork in putting together college programs has perhaps surpassed the expediencies evident in public school programs. The number of well-trained and experienced college teachers continues to be inadequate in the extreme.

Another aspect of growing pains has concerned space and facilities. The rush of developments has forced some programs into left-over basement classrooms, rented American Legion Halls or the like, and occasionally into school house closets. In many colleges, the burgeoning new special education departments have been squeezed into crowded far corners of the campus or into temporary off-campus spaces. The continuing lack of federal supports for buildings and facilities while urging program development is a seriously discouraging aspect of many situations.

Supervision, administration, continuing education, and diagnostic services have also had to be dealt with in shortcut fashion in too many places. As a result, many special education teachers lead lonely professional lives, in the sense that they have little specialized service from well trained supervisors and administrators. Too many children are entered into special programs who, for lack of diagnostic resources, are poorly understood by their teachers and parents. These kinds of difficulties occur with much unevenness, of course, but almost everywhere there are problems in these important program elements.

Besides growing rapidly, special education has been virtually catapulted into a kind of spearhead and pilot role for all of education. For example, a decade ago when the first federal funds were made available through the U.S. Office of Education for support of educational research, three-fourths of the first year's appropriation was earmarked for one area of special education—mental retardation. It was not uncommon for newly formed departments of special education to be the first in an entire school of education to receive federal grants for research. More recently, research support has been generalized to cover all aspects of education but special education, despite its youthfulness, was first in line.

Similarly, special education provided a kind of trial-run on federally supported training programs in education. In the 85th and 87th Congresses, substantial training programs were authorized (in the fields of mental retardation and hearing impairments, respectively) which were

later generalized across almost all of special education in the 88th Congress. All of this came in advance of the more recent Higher Education Act and other federal acts which authorized training programs in other fields of education. Again, special education was in the forefront in working out all of the details of relating to a major new partner in educational affairs—the U.S. Office of Education.

The active role of special educators in political affairs and in work with community agencies, including parent groups, was also anticipatory for the remainder of education. For example, the present "mix" of anti-poverty programs, private school programs, and public school programs contains fewer bumps and shocks for special educators than for others because special education had been developing within a complex of community agencies and professions—public and private—for some time.

Within colleges and universities it is not uncommon to see relatively new programs in special education emerge in the forefront of efforts to build new levels of graduate education. In public schools special education is regularly a lead area in forming new cooperative endeavors with neighboring school districts, in achieving school consolidation, and formation of "intermediate units" of school administration.

This picture of special education developments over recent years is all too brief for most purposes, but it does reveal unmistakably a very rapid growth rate in the field as well as an unusual leadership role for special educators. Participation in these rapid events has issued much satisfaction to many special educators and justifiably so. But what remains clouded is the extent to which the gains which we count so easily are also gains in quality of service. Out of this concern for quality, which is the mark of every professional person and every professional organization, grows efforts in the field of standards.

THE NEED FOR STANDARDS

The development and regulation of standards by which quality controls may be achieved is a major problem in special education. It is of utmost importance that in the broadest possible way the field should study itself, make quality standards explicit and then have them regulated.

CEC's Professional Standards Project

It is in this urgent context that the Council for Exceptional Children, with the support and cooperation of a number of other organizations, launched a particularly intensive effort in the field of professional standards just over two years ago. The project was headed by a committee whose major report took the form of a proposed policy statement for

CEC. The report was adopted by the Council at its convention in April, 1966, as its first formal policy statement in the field of professional standards. Copies of the report have been distributed broadly and additional copies may be obtained by writing to the Council. An introductory part of the report tells the complex story, which need not be repeated here, of hundreds of individual activities, dozens of small group conferences, and six regional and national conferences which were involved in preparing the statement.

Most parts of the policy statement are concerned with specifying competencies required of special education teachers and the translation of these into standards for colleges and universities which presume to prepare such teachers. Other sections are concerned with standards for doctoral programs, preparation of administrators and supervisors, continuing education and professional ethics.

Many parts of the report should be useful in certification and accreditation activities, although it has been emphasized from the beginning that CEC does not propose to become involved directly in either of these important aspects of standards regulation. By its work, CEC has claimed a voice for all members of the profession in developing statements of standards. But official certification is recognized as a State function and CEC has strongly supported the idea of a single national agency, recognized by the National Commission on Accrediting (NCA), to accredit *all* programs of teacher education. The accrediting powers granted by the NCA to the American Speech and Hearing Association, relating to programs for preparing speech correctionists, is acknowledged in CEC's policy statement, along with suggestions for assuring adequate specialization in school-centered speech activities for those who would presume to work in the schools.

The report should be useful to colleges which are considering new training programs, sometimes by suggesting that their performance is not likely to be creditable and thus leading them to stay out of the field. In other instances, colleges will find the report helpful in designing improvements in present programs. More carefully studied planning is surely needed in the colleges and universities, and it is greatly to be hoped that CEC's policy statement will encourage such planning. Parts of the report dealing with continuing education and professional ethics are, of course, of immediate importance for every person in the field.

CONTINUING PROBLEMS AND ACTIVITIES

CEC's efforts of the last two years reached culmination in the adoption

of a report, but it would be a mistake to judge anything as final or closed. Indeed, the Governing Board of CEC authorized a continuing effort, under a new committee, concurrently with its favorable consideration of the recent report. Some of the continuing problems in the professional standards field are considered briefly below.

Refinement and Implimentation of the Standards Policy Statement.

Intensive work on professional standards, when processes are open and many people involved, tends to generate deep concern and an increasing flow of ideas which need to be considered in continuation projects. The recent CEC efforts have certainly stirred much throughtful deliberation, and the new committee must stand ready to hear these further ideas and to use them, as appropriate, in revising the present report.

Many ideas for implementation of the recently adopted report have been produced, especially through the four broad regional conferences held in the Fall of 1965. They run the gamut from ideas for better recruitment and selection of prospective teachers to notions about implementing higher standards in training programs. A variety of suggestions about professional ethics and continuing education have also been generated, and literally hundreds of people helped devise ideas about how CEC should work further in the field. All of these ideas have been carefully recorded and will deserve attention from the new committee.

Developing Effective Accreditation Mechanisms

A specific problem which will require strong efforts in the immediate future concerns the accreditation of specialized teacher education programs. CEC has shown a clear and strong sense of partnership with the remainder of education by turning first, in work on accreditation, to the National Council for Accreditation of Teacher Education (NCATE). It is the one accrediting agency in the field of teacher education recognized by the NCA. Unfortunately, NCATE is in early stages of its own development, having been created only in 1956, and has suffered great difficulties in finding an effective and acceptable format for its operations. It has never had the solid financing and other resources needed to do a thorough job in its very complex field.

NCATE has not been able to mobilize a genuine effort to offer accreditation services in highly specialized areas and apparently there is some sentiment against its ever becoming involved at specialized levels. Some people believe that it is enough to accredit only at the level of elementary or secondary teacher education, for example, and then to subsume creditable performance in related special fields.

This view is neglectful of important aspects of special standards and

is not acceptable to special education. Efforts must be continued to create a mechanism which does *all* of the accreditation job in colleges and universities, not just parts of it. This year, the federal allocations for support of teacher education programs in special education will be in the neighborhood of $24 million and soon the figure will be at $30 million and more. Hundreds of colleges and universities are involved and many of them have deeply troublesome problems. The magnitude of programs and problems makes it clear that institutions of higher education must have their own voice in creating the public lists of accredited institutions and not rest content with present practices which seem either too general or too preponderantly governmental in sponsorship.

NCATE has just emerged, with apparent success, from a difficult period of revising its own structure and perhaps it will now be able to turn attention to the kinds of concerns expressed above. CEC has made contacts which, hopefully, will now develop into joint efforts to achieve effective voluntary accreditation within the NCATE structure. Much time and considerable resources will be required if such efforts are to succeed.

Accreditation activities have been vastly strengthened in secondary schools in recent years and elementary schools are now receiving attention as well. But again, there has been a tendency to gloss over special education programs. In part, this results because special educators themselves have not produced the necessary statements of standards and guidelines by which evaluation and accreditation activities are organized. At a meeting of the Interagency Committee held this past spring (a committee convened by CEC which consists of representatives of approximately twenty national organizations concerned with education of exceptional children), this problem was given high priority for attention. Contacts have since been made which will involve CEC and its interagency Committee in writing standards for elementary and secondary school special education programs. Eventually, this line of work should yield dividends in the form of better evaluations of local school programs for exceptional children and more informed efforts for improvement.

Revising Basic Concepts

Several voices were heard during the recent two years' project, especially in late stages of report writing last year, suggesting that perhaps the basic structure of the whole effort was faulty. Some thought that too much rested upon a system of categories borrowed unwisely from medicine or accepted from mere tradition. A few persons suggested that the report might have negative effect if published in the format then

emerging and that publication plans should be suspended pending further deliberations and revisions. Concern seemed to center around use of a more strictly educational language in treating educational problems, greater attention to multiply-handicapped children and the need to stress commonalities among the several special fields-rather than to force a disparateness.

The interesting and quite fundamental questions along these lines which were emerging in connection with CEC's project last year need further attention. The Standards Committee decided to proceed with its project on schedule, but it also encouraged the development by CEC of a forum in which the most thoughtful possible attention could be given to basic questions concerning special education. Specific plans for continuation of the discussion have been developed.

Other Problem Areas

Space permits only mention of a number of additional problem areas which will require careful attention as part of a broad standards program. For example: how to achieve better regional and national planning for use of limited collegiate level training resources; how to implement standards in sparsely populated and isolated communities; how to assist those residential schools which are still harnessed by inadequate salaries and other lacks of resources; how to improve architectural design of specialized facilities; how to evaluate instructional materials; how to communicate research results to practioners; how to achieve reciprocity among the States in certification of special teachers; how to improve the quality of supervisory services.

SUMMARY

Special education programs have grown very rapidly in the past two decades. Busy special educators have also been thrust in the role of spearheading new modes of operation for the remainder of the educational enterprise. This hurried pace of development and leadership has involved some neglect of quality standards. In this context, CEC's recent professional standards project has been discussed, with emphasis upon the inevitability of gradualness in developing and regulating standards and upon the importance of continuing activities in the standards field.

Biographical Sketches of Distinguished Lecturers

Dr. Harold M. Skeels, recently retired from the Community Service Branch, National Institute of Mental Health, received his BS (1927) from Iowa State College, and his MA (1930) and Ph.D. (1932) from the State University of Iowa. From 1932 to 1946, he served on the Iowa Child Welfare Research Station and as Associate Professor at the State University of Iowa, while director of psychological services for the Iowa Board of Control of State Institutions. After serving in the Air Force for four years, he was chief clinical psychologist from 1947 to 1949 at the Denver VA Branch Office. From 1949 to 1951, Dr. Skeels was consulting clinical psychologist in San Francisco for the U.S. Public Health Service, and in 1951 became Science Director for the Community Service Branch, NIMH. Dr. Skeels now resides in Southern California.

Dr. Boris V. Morkovin received his Ph.D. in 1929 from the University of Southern California after lecturing from 1911 to 1926 at the Charles University in Prague. His professional experience at USC include serving as assistant professor of comparative literature 1926 to 1929, associate professor and head of the Cinema Department from 1929 to 1939, and professor and research professor for the Hearing Clinic, Department of Speech, from 1939 to 1948. Dr. Morkovin became Emeritus Professor of speech at USC in 1948. His special areas are social psychology of literature and cinema, and the development of oral communication skills of deaf children.

Dr. Melvyn I. Semmel, Associate Professor of Educational Psychology and Special Education at the University of Michigan, received his BS (1955) and MS (1957) degrees from the City University of New York, and his Ed.D. from George Peabody College for Teachers in 1963. He taught in the New York City Public Schools from 1955 to 1957, and was coordinator of the Special Services School in Westbury, New York from 1957 to 1959. From 1959 to 1963, Dr. Semmel was associate professor of special education at the State University of New York, while teaching as a visiting associate professor at Hunter College in

1959 and at George Peabody College during the summer of 1962 and 1963. He became assistant professor at the University of Michigan in 1963, where he now serves as associate professor of educational psychology and special education.

Dr. Francis E. Lord, Professor of Special Education at California State College, Los Angeles, received his BA from Eastern Michigan University, his MA from the University of Chicago, and his Ph.D. from the University of Michigan. He taught in the Michigan public and demonstration schools for 8 years, and was assistant to associate professor at Eastern Michigan University for 15 years. He served as chairman of the Department of Special Education and as director of the Rackham School of Education in Eastern Michigan for 12 years while teaching part time at the University of Michigan. Dr. Lord has been editor of *Exceptional Children* from 1943 to 1953, and president of the International Council on Exceptional Children. For the past 13 years, he has been chairman of the Department of Special Education and Professor at California State College, Los Angeles.

Dr. May V. Seagoe serves as Associate Dean of the School of Education at the University of California, Los Angeles. She received her B.Ed. from UCLA in 1929, and her MA (1931) and Ph.D. (1934) from Stanford. After serving as an elementary teacher, counselor, director of research, and special adviser to various city school districts in Los Angeles County from 1925 to 1935, she began as an instructor of educational psychology at the University of California, Los Angeles in 1934, and progressed to full professor. In 1963, she became Associate Dean of the School of Education.

Dr. Maynard C. Reynolds is a Professor and Director of the Department of Special Education at the University of Minnesota. He received his BS from Moorhead State College in 1942, and his MA (1947) and Ph.D. (1950) from the University of Minnesota. From 1950 to 1951 he taught education and psychology at Long Beach College, and then became Director of the Psychoeducational Clinic at the University of Minnesota in 1951. In 1957, he reached his present position at the University of Minnesota. Dr. Reynolds is the immediate past president of the Council for Exceptional Children and has been Chairman of the Minnesota State Advisory Board on Handicapped and Gifted Children, of which he is still a member. He serves on several advisory committees

of the U.S. Office of Education and the U.S. Public Health Service and is consulting editor to the *Journal of Exceptional Children* and the *American Journal of Mental Deficiency*. He also serves as adviser to the Educational Policies Commission and on the advisory board of the Minnesota Association for Retarded Children. His biography is included in *Who's Who in America* and *American Men of Science*.

Previous Distinguished Lectures In Special Education

SUMMER SESSION 1962

July 2—California and Her Exceptional Children
Charles W. Watson, Chief, Bureau of Special Education, California Department of Education

July 9—New Developments in the Administration of Special Education
Ernest P. Willenberg, Director, Special Education Branch, Los Angeles City School District

July 16—Needed Major Changes in School Concern for the Mentally Retarded
E. Paul Benoit, Director, Home for Retarded Children, Jewish Foundation for Retarded Children, Washington, D.C.

July 23—Education of Young Deaf Children and Their Parents
Mrs. Spencer Tracy, Director, John Tracy Clinic

July 30—Research of the Education of the Gifted Child
Ruth A. Martinson, Professor of Education, Long Beach State College, now Dean, California State College at Dominquez Hills

August 6—Education of Children With Learning Difficulties
Marianne Frostig, Director, Marianne Frostig School of Educational Therapy, Los Angeles

SUMMER SESSION 1963

July 11—Reflections on Special Education in the USSR
James F. Magary, Editor, College Division, McGraw-Hill Book Company, now Chairman, Educational Psychology, USC

July 18—Residential Treatment of Retardation and Emotionally Disturbed Youths
Robert G. Ferguson, Director, California Branch, Devereux Schools, Santa Barbara Charlotte Elmott, Director, California Branch, Devereux Research and Training Institute

July 25—AN INTEGRATED PROGRAM FOR MULTIPLY HANDICAPPED CHILDREN IN HOSPITALS AND PUBLIC SCHOOLS
"Educational Aspects," Sophia Salvin, Administrator, Washington Boulevard School, Los Angeles
"Therapy Programs," Jean Ayres, Associate Professor of Occupational Therapy, USC
"Hospital Volunteer Program," Mrs. George Wassoon, Coordinator, Volunteer Services, UCLA Medical Center

August 1—COUNSELING THE PARENTS OF THE CEREBRAL PALSIED CHILD
Melba Miller, Superintendent, State School for Cerebral Palsied Children, Los Angeles

August 8—MENTAL RETARDATION IN THE 1960's
Rick F. Heber, Professor of Special Education, University of Wisconsin

SUMMER SESSION 1964

July 15—THE ADMINISTRATION OF SPECIAL EDUCATION PROGRAMS
Clifford Howe, Former Director, Special Education Department, Long Beach Unified Schools

July 22—THE IMPORTANCE OF DIAGNOSTIC SERVICES FOR THE MENTALLY RETARDED
Richard Koch, M.D., Associate Professor of Pediatrics, School of Medicine, USC

July 29—A REVIEW OF THE MENTAL RETARDATION JOINT AGENCIES PROJECT
Ivy M. Mooring, Director, Mental Retardation Joint Agencies Project

SUMMER SESSION 1965

June 24—GENERALIZED EFFECTS OF PERCEPTUAL-MOTOR TRAINING
Thomas Ball, Clinical Psychologist, Pacific State Hospital

July 1—MENTAL RETARDATION, MEDICAL VIEWS ON THE PRESENT AND THE FUTURE
George Tarjan, M.D., Former Superintendent and Medical Director, Pacific State Hospital, Pomona, Now Professor of Medicine, UCLA

July 8—SOCIAL PERFORMANCE OF THE MENTALLY RETARDED
Harvey Dingman, Project Research Director, NIMH Project, Pacific State Hospital

July 15—A Report in the Mental Retardation Joint Agencies Project
Leo Cain, President, California State College at Dominquez Hills

July 22—Behavior Therapy in Mental Retardates
Lawrence Dammeron, Clinical Psychologist, Pacific State Hospital, Project Director for Conditioning Techniques in Behavior Problems of Mental Retardates

July 26—Neuro-Pediatric Approaches to School Behavior and Learning Disorders
Elena Boder, M.D., Associate Clinical Professor of Pediatrics, USC School of Medicine

July 27—Psychiatric Approaches to School Behavioral and Learning Disorders
Evis Coda, M.D., Director, Kennedy Child Study Center

July 28—Problems in Developmental Aphasia, Dyslexia, and Minimal Brain Injury
Arthur Benton, Professor of Psychology and Neurology, University of Iowa

SUMMER SESSION 1966

June 22—Headstart on Headstart: A Thirty Year Evaluation
Harold M. Skeels, Retired, Community Service Branch, NIMH, U.S. Public Health Service

June 29—The Role of Language in the Development of the Preschool Deaf Child
Boris V. Morkovin, Professor Emeritus, USC

July 6—Language Research in Relationship to the Mentally Retarded and Culturally Deprived
Melvyn Semmel, Associate Professor of Education, University of Michigan

July 13—Medical Classification of Disabilities for Educational Purposes—A Critique
Francis E. Lord, Professor of Special Education, California State College at Los Angeles

July 27—Yesterday Was Tuesday: Issue in Language Instruction for the Severely Mentally Retarded
May V. Seagoe, Associate Dean, School of Education, UCLA

August 3—A Profession in A Hurry: The Need for Standards
Maynard Reynolds, President, Council for Exceptional Children, and Chairman, Department of Special Education, University of Minnesota

Recent Doctoral Dissertations at the University of Southern California Relating to the Psychology and Education of Exceptional Children and Youth

MENTAL RETARDATION

Attwell, Arthur Albert, 1960 (Education). Differential Abilities in Normal and Retarded Children at Mental Age Six.

Barber, Bernard, 1963 (Sociology). A Study of the Attitudes of Mothers of Mentally Retarded Children as Influenced by Socioeconomic Status.

Berman, Isaac, 1964. Wechsler Scores vs. Piaget Levels: A Study of the Cognitive Efficiency of Institutionalized Retardates.

Carlson, Dale Clifford, 1965 (Education). An Investigation of Two Language, Two Memory, and Two Perceptual Abilities in Retardates of Mental Age Four.

Dobson, James Clayton, Jr., 1967 (Education). Intellectual and Linguistic Development in Treated and Untreated Phenylketonuric Children.

Eklund, Liv Helena, 1965 (Education). The Relative Efficiency of Prompting and Confirmation Learning Paradigms in Teaching Meaningful and Meaningless Material to Retarded and Normal Children.

Kramer, Richard Albert, 1966 (Education). Reversal and Nonreversal Shift Performance of Retardates under Various Motivational and Stimulus Conditions.

Laughlin, Harry E. A Study of Mentally Retarded Junior High School Pupils Assigned to Special Training Classes.

Mercer, Jane Ross, 1963 (Sociology). An Analysis of Factors in the Family's Withdrawal of a Patient from a Hospital for the Mentally Retarded.

Milton, Robert G., 1964. Prediction of Therapeutic and Intellectual Potential in Mentally Retarded Children.

Pinegar, Rex Dee, 1966 (Education). Exceptional Children: Instructional Techniques in Arithmetic.

Safford, Alton Lugton, 1966 (Education). The Effects of Distracting Stimuli upon Mentally Retarded Minors in the Performance of Different Kinds of Tests.

Sitkei, Emil George, 1966 (Education). Comparative Structure of Intellect in Middle and Lower Class Four-Year-Old Children of Two Ethnic Groups.

Weiler, William George, 1965 (Education). School Behavior and Attitudes of Retarded and Average High School Boys as Concomitants of Intelligence and Socioeconomic Status.

Weilbanks, John Cooper, (Education). A Comparative Study of Certain Factors Observed by Teachers in Mentally Retarded and Normal Individuals and Classes.

Wigger, Leslie Orval, 1963 (Education). An Assessment of Effects of a Large, County-wide, Public School Program of Special Training Classes on Trainable Retarded Children.

SOCIO-EMOTIONALLY DISTURBED

Adam, Andrew, 1958 (Education). Identifying Socially Maladjusted School Children.

Bertcher, Harvey Joseph, 1966 (Social Work). Factors That Affect the Attitudes of Girls Toward Staff in a Correctional Institution.

Birnbaum, Louis, 1966 (Education). A Comparative Study of the Relation of Broken Homes to the Social Class and School Success of Secondary School Boys.

Brizzolar, Carl J., (Education). Public Schools for Juvenile Delinquents in California.

Coombs, Robert Warren, (Education). The Appraisal of Personal Problems of High School Seniors.

Curtis, Glenn Richard, 1963 (Psychology). Self-Concept and Identification of Preschizophrenic Adolescents.

Hill, William Gilliam, 1960 (Social Work). Federal Grants to the States for Community Mental Health Services with Special Reference to Some Western States.

Jackson, Ernest Herman, 1962 (Education). A Four-Year Project in the Elementary School for Emotionally Handicapped Children.

King, Louis T., (Education). Activity Group Therapy with Three Groups of Selected School Children.

Knoll, Robert Eugene, 1966. Delinquency and Rationalization: A Study of the Delinquent Act.

Mallory, Charlie Eugene, 1965. Positive and Negative Verbal Reinforcement in the Conditioning of the Verbal Behavior of Adolescent Underachieving Delinquents with Dependent, Neutral, and Aggressive Stimuli.

Rochlin, Martin, 1966. Behavioral Seriousness and Impulse-Control Balances in Delinquency.

Sussman, Edward, 1966 (Education). A Projective Look at the Educational History of Adult Mental Patients.

Thomas, Mary Margaret, 1960 (Sociology). Parents of Schizophrenic and Normal Children: A Comparison of Parental Attitudes, Marital Adjustment, Role Behavior, and Interaction.

Wells, Edward Bradner, 1962 (Education). Reading Disability and Antisocial Behavior in Early Adolescents.

Wohl, Jonathan, 1962 (Education). A Study of the School Achievement and Adjustment of Children from One-Parent Homes.

EDUCATIONALLY DISADVANTAGED

Ahlem, Lloyd Harold, 1962 (Education). The Relationships of Classroom Climate to Teachers' Knowledge of Students' Sociometric Status, Manifest Anxiety, Ability, Achievement, and Socioeconomic Status.

Birnbaum, Louis, 1966 (Education). A Comparative Study of the Relation of Broken Homes to the Social Class and School Success of Secondary School Boys.

Charlap-Hyman, Arthur, 1964. Self Concept and Social Class Correlates of Contrasting Behavioral Subcultures among Ninth Grade Boys.

Cline, Marion, 1961 (Education). Achievement of Bilinguals in Seventh Grade by Socioeconomic Levels.

Fairweather, Paul D., 1960 (Education). The Appropriateness of Field and Level of Vocational Choice as Related to Self-Concepts, Intelligence, School Achievement, and Socio-economic Status.

Foster, Judilynn Theisen, (Education). Some Effects of Preschool Experience on the General Intelligence and Creativity of Culturally Disadvantaged Children.

Hibler, Madge Beatrice, 1960 (Speech). A Comparative Study of Speech Patterns of Selected Negro and White Kindergarten Children.

Moses, Darrell Lee, 1960 (Education). The Relationship of Self-Concept Discrepancies to Vocational Choice, Intelligence, School Achievement, and Socioeconomic Status.

Palomares, Uvaldo Hill, 1966 (Education). A Study of the Role of Mobility in the Acculturation Process of Disadvantaged Mexican-Americans in the Coachella Valley.

Powell, Clyde Frances Allen, 1966 (Education). The Rehabilitation of School Dropouts Through an Intensive Summer School Program.
Rostin, Arlene, (Education). Reading Interests of Children of Upper, Middle and Lower Socioeconomic Class Groups.
Sitkei, Emil George, 1966 (Education). Comparative Structure of Intellect in Middle and Lower Class Four-Year-Old Children of Two Ethnic Groups.
Tate, Elfleda Jackson, 1966 (Education). An Analysis of Health Education Textbooks in Reference to the Needs of the Culturally Deprived Child.
Weiler, William George, 1965 (Education). School Behavior and Attitudes of Retarded and Average High School Boys as Concomitants of Intelligence and Socioeconomic Status.

EDUCATIONALLY HANDICAPPED AND/OR THE UNDERACHIEVER

Belleau, George Samuel, 1963 (Education). Investigation of a Self-Report Method in the Study of Underachievement Among Elementary School Children.
Berg, Richard Hamilton, 1963 (Education). Mothers' Attitudes on Child Rearing and Family Life for Achieving and Underachieving Elementary School Children.
Birnbaum, Louis, 1966 (Education). A Comparative Study of the Relation of Broken Homes to the Social Class and School Success of Secondary School Boys.
Clements, Thomas Hubbard, 1963 (Education). A Study to Compare the Effectiveness of Individual and Group Counseling Approaches with Able Underachievers when Counselor Time is Held Constant.
Collins, John Edward, 1964 (Education). A Comparative Guidance Study: Group Counseling Methods with Selected Underachieving Ninth Grade Students.
Currie, Robert Jacques, 1966 (Education). Value Orientation of Parents of Academically Successful and Unsuccessful Children.
Filipelli, John James, 1965. Personality Factors in Reading Disability: A Psychodynamic Approach.
Friedman, Robert, 1965 (Education). A Comparison of Two Instructional Programs for Severely Retarded Readers at the Junior High School Level.
Frostig, Marianne, (Education). Clinical Approaches to Education.
Goldman, Hymen Charles, 1962 (Education). Attitudinal, Perceptual and Cognitional Rigidity in Boys with Reading Disabilities.
Gray, Benjamin Galbreath, 1959 (Education). Characteristics of High and Low Achieving High School Seniors of High Average Academic Aptitude.
Hall, Mildred Elizabeth, 1963 (Education). The Effects of Individual Counseling on Selected Groups of Underachieving Students with High Ability.
Hotchkiss, James Merel, 1966 (Education). The Modification of Maladaptive Behavior of a Class of Educationally Handicapped Children by Operant Conditioning Techniques.
Irvine, Edward Terry, 1962 (Education). Increased Individual Counseling as a Factor in Improving Subject Matter Grades of Underachieving Superior High School Students.
Mallory, Charlie Eugene, 1965. Positive and Negative Verbal Reinforcement in the Conditioning of the Verbal Behavior of Adolescent Underachieving Delinquents with Dependent, Neutral, and Aggressive Stimuli.
Powell, Clyde Frances Allen, 1966 (Education). The Rehabilitation of School Dropouts Through an Intensive Summer School Program.
Rosenthal, O. Arthur, 1965. A Semantic Differential Investigation of Critical Factors Related to Achievement and Underachievement of High School Students.
Schellenberg, Ernest David, 1962 (Education). A Study of the Relationship between Visual-Motor Perception and Reading Disabilities of Third Grade Pupils.
Strem, Bruce Elwood, 1966. An Attitude Survey of High School Dropouts by Means of the Semantic Differential Process.

Strickler, Edwin, 1965. Educational Group Counseling within a Remedial Reading Program.
Sutcliffe, Charles E., (Education). Factors Related to Low Achievement by High School Pupils of High Mental Ability.
Wells, Edward Bradner, 1962 (Education). Reading Disability and Antisocial Behavior in Early Adolescents.

NEUROLOGICALLY IMPAIRED

Ayres, Anna Jean, 1961 (Education). Space Perception and Visualization in Cerebral Dysfunction.
Elliot, Robert Thomas, 1966 (Education). Concept Formation Ability of "Brain-Injured" Children of Normal Intelligence.
Goldman, Hymen Charles, 1962 (Education). Attitudinal, Perceptual, and Cognitional Rigidity in Boys with Reading Disabilities.
Howe, John Wesley, 1963 (Education). The Visual Fusion Threshold (VFT) Test as a Measure of Perceptual Efficiency in Kindergarten and First Grade and as a Possible Predictor of Later Reading Retardation.
Rosenswieg, Joel, 1963 (Education). Sensory Perception of the Motor Skilled.
Schellenberg, Ernest David, 1962 (Education). A Study of the Relationship between Visual-Motor Perception and Reading Disabilities of Third Grade Pupils.

COMMUNICATION HANDICAPS

Broida, Helen, 1962 (Speech). An Empirical Study of Sex-Role Preference in a Selected Group of Stuttering Male Children.
Griffiths, Ciwa, (Education). The Utilization of Individual Hearing Aids with Young Deaf Children in a Normal Environment.
Hibler, Madge Beatrice, 1960 (Speech). A Comparative Study of Speech Patterns of Selected Negro and White Kindergarten Children.

PHYSICALLY HANDICAPPED

Godfrey, Barbara Barnard, 1958 (Education). Leadership Training in Camping for the Handicapped.
Schoen, Lloyd Romaine, 1965 (Education). A Study of Practices and Problems in the Integration of Physically Handicapped Children in Regular School Programs.
Ullom, William Lawrence, 1958 (Education). The Physically Handicapped Teacher in the Public Schools.

VISUALLY HANDICAPPED

Cull, Eoline Christine, 1963 (Education). Development and Analysis of Some Tactual Measures of Intelligence for Adolescent and Adult Blind.

VOCATIONAL REHABILITATION

Palmer, Jean Deeds, 1965. The Relationship of Personal Data Items to Vocational Rehabilitation.

GIFTED AND CREATIVE CHILDREN AND YOUTH

Bonsall, Marcella S., 1952 (Education). Reactions of Gifted High School Pupils to Elementary Education.
Cassell, J. W., 1967 (Education). The Administration of Programs for Academically Talented Students in Selected Secondary Schools of Texas.
Duncan, Donald Keith, 1964 (Education). Programs for Mentally Gifted Minors and Other Gifted Students in the Unified School Districts of California.
Gardner, Sheldon Frank, 1963 (Psychology). Creativity in Children, A Study of the Relationship between Temperament Factors and Aptitude Factors Involved in the Creative Ability of Seventh Grade Children, with Suggestions for a Theory of Creativity.

Hall, Mildred Elizabeth, 1963 (Education). The Effects of Individual Counseling on Selected Groups of Underachieving Students with High Ability.
Irvine, Edward Terry, 1962 (Education). Increased Individual Counseling as a Factor in Improving Subject Matter Grades of Underachieving Superior High School Students.
Jacobson, Morris Alexander, 1966 (Education). The Relationship of Creative Thinking Ability, Intelligence, and School Performance.
Kincaid, Donald J., 1956 (Education). Objectives of Education for Gifted Children in California Elementary Schools.
Leichman, Nathan S., 1956 (Education). A Study of Parents' Satisfactions and Problems in Rearing Mentally Accelerated Children.
Mitchell, Anita M., 1956 (Education). A Program of Free Time Education for Students of Superior Ability at the Secondary Level.
Nason, Leslie J., (Education). Patterns of Circumstances Related to Educational Achievement of High School Pupils of Superior Ability.
Risser, John Joseph, 1966 (Education). The Administration of Special Academic Classes for the Gifted Pupil in High School.
Schmadel, Elnora, 1960 (Education). The Relationship of Creative Thinking Ability to School Achievement.
Sutcliffe, Charles E., (Education). Factors Related to Low Achievement by High School Pupils of High Mental Ability.
Twitchell, Theodore Grant, 1964 (Education). Programs Initiated by Institutions of Higher Learning for Gifted High School Students in California.
Van Deren, Richard Howard, 1966. The Development of Selected Creative Thinking Abilities Through Creative Discussion in the Seventh Grade Curriculum: An Experimental Investigation.
Yeremian, Thais Sherman, 1966 (Education). Creative Thinking and Academic Achievement of Honors Students at the University of Southern California.

Graduate Study in Special Education at the University of Southern California

CALIFORNIA CREDENTIAL

Mental Retardation
Orthopedically Handicapped including Cerebral Palsied

DEGREES

Bachelor of Science in Education
Master of Science in Education
Advanced Master of Education
Doctor of Education
Doctor of Philosophy

AREAS OF SPECIALIZATION

Mental Retardation
Orthopedically Handicapped
Cerebral Palsied
Visually Handicapped
Severely Emotionally Disturbed
Educationally Handicapped—Learning Disabilities
Research in Handicapping Conditions
Research in Learning Disabilities
Deaf and Hard of Hearing (in conjunction with John Tracy Clinic)

Programs leading to:

Teaching Credentials
Master of Arts
Advanced Master of Science
Doctor of Education
Doctor of Philosophy

Preparation for employment as:

Teachers and coordinators in special education
Administrators of special schools and programs
College teachers in special education
Research workers and directors
Consultants in special education

PROGRAMS

A. Teacher training:

This program consists of both in-service and pre-service training. These are primarily at the graduate level although an undergraduate sequence is available to young people interested in special education. At present the USC teacher preparation programs are accredited in the areas of mental retardation, speech correction and lip reading, deaf and hard of eharing and physical handicapping conditions. Credentials to teach educationally handicapped, emotionally disturbed, and/or neurologically handicapped do not exist in California at present.

B. Graduate degree programs:

The School of Education and the Department offer four basic degrees: Master of Arts, Advanced Master of Science, Doctor of Education, and Doctor of Philosophy.

Master of Arts:

This is the basic degree in the School of Education and is closely connected with teaching credential programs. For persons interested in teaching positions and no desire for a higher degree, it is possible to complete the M.A. without a thesis. Fellowship students are expected to do a thesis and to complete one or more special education teaching credentials as part of their master's program.

Advanced Master of Science:

This is a sixth year degree and includes the writing of an advanced study somewhat beyond the level of a master's thesis. Students, including those on Fellowship, working on this degree will normally complete all the requirements for admission into the doctoral program. Credential programs requiring long preparation, e.g. administration, may be accomplished in conjunction with this degree.

Doctor of Education and Doctor of Philosophy:

Doctoral programs, including Fellowship programs, in Special Education require a content emphasis on two types of handicapping conditions and on one major professional approach to problems in the field, e.g.

educational psychology, curriculum administration, guidance, school psychology, etc. Students normally take a doctoral minor in one of the other departments of the Division but many minor in other Divisions of the University.

PRACTICUM FACILITIES

Wide use is made of the many opportunities to work with exceptional children which are available in a large metropolitan center. Washington Blvd. School, near to campus, is the major training school. Additional classes in the Los Angeles and Long Beach school districts serve as practicum facilities. Intensive use is also made of state, county, local, and private institutions and organizations serving exceptional children, youth, and adults. The following list indicates the main training facilities for USC special education students.

I. Facilities under supervision of Washington Blvd. School

Adult Program for Physically Handicapped
Educationally Handicapped Classes
Hospital Classes (Orthopedic, Shriner's and UCLA Hospitals)
Rehabilitation Center of Cedars of Lebanon Hospital
Sophia T. Salvin Day Camp
Tele-tech system for homebound students
Training School (observation, directed Teaching; physically handicapped, trainable mentally retarded, educationally handicapped)

II. Mentally Retarded

Children's Hospital, Child Development Clinic
Devereux School, Santa Barbara
Exceptional Children's Foundation
Kennedy Child Study Center, Santa Monica
Pacific State Hospital, Pomona
Thirty-Second Street School, Los Angeles

III. Physically Handicapped

Neurology Clinic, Los Angeles Health Services Branch
Rancho Los Amigos County Hospital
United Cerebral Palsy Sheltered Workshop

IV. Emotionally Disturbed

Los Angeles County General Hospital, Children's Psychiatric Unit
Belle Dubnoff School
Camarillo State Hospital
Long Beach City Schools, Educationally Handicapped Classes
Marianne Frostig School of Educational Therapy

V. Visually Impaired

Los Angeles City Schools
Braille Institute of America
Blind Children's Center

Department of Education of Exceptional Children Faculty 1966-67

A. Jean Ayres, Ph.D., Associate Professor of Education
Eugenia Grace Baker, M.A., Assistant Professor of Education, Coordinator—Teacher Training in Orthopedic Handicaps
Elena Boder, M.D., Adjunct Associate Professor of Education and Associate Clinical Professor of Pediatrics
Leo F. Buscaglia, Ph.D., Assistant Professor of Education, Coordinator—Programs in Educational Handicaps
Joseph G. Coss, Ed.D., Visiting Assistant Professor of Education, Coordinator—Research Training for Severely Physically Handicapped
Russell Forney, Ph.D., Lecturer in Education, Research Training for Severely Physically Handicapped
Marianne Frostig, Ph.D., Clinical Professor of Education and Director Frostig School for Educational Therapy
Richard Koch, M.D., Adjunct Associate Professor of Education and Associate Professor of Pediatrics
Edgar L. Lowell, Ph.D., Professor of Education and Administrator, John Tracy Clinic
James F. Magary, Ph.D., Associate Professor of Education, Coordinator—Doctoral Programs in Orthopedic Handicaps
Valerie Martin, Lecturer
C. Edward Meyers, Ph.D., Professor of Education
Robert B. McIntyre, Ph.D., Associate Professor of Education, Department Chairman, and Coordinator—Doctoral Programs in Mental Retardation
Adah-Marie Miller, M.A., Instructor-Coordinator in Education, Coordinator—Pre-School Project
Calvin C. Nelson, Ph.D., Assistant Professor of Education Coordinator—Programs in Visual Impairment
Laurence J. Peter, Ed.D., Associate Professor of Education Coordinator—Programs in Emotional Disturbances

SOPHIA T. SALVIN, M.A., Clinical Professor of Education and Administrator, Washington Boulevard School for the Multiply Handicapped, Official USC Lab School
ALATHENA SMITH, Ph.D., Adjunct Assistant Professor of Education
CHARLES WATTS, M.A., Assistant Professor of Education Coordinator —Teacher Training in Mental Retardation

FELLOWSHIP AWARDS

Fellowship funds are available for students interested in Master's and Doctoral degrees in the areas of mental retardation, emotional disturbance, physical handicaps, deaf and hard of hearing, speech impairment, and visual impairment.

All awards are for full-time study for the academic year.

Applicants for these fellowships must be qualified for admission to graduate study in the School of Education.

Selection is based on:

1. Satisfactory scores on G.R.E. and G.P.A.
2. Experience in education of exceptional children or other indication of commitment in the field
3. Good general references
4. Special recommendations for advanced study
5. Personal interview (where possible)

Inquiries about fellowships in mental retardation, physical handicaps, emotional disturbance, administration of special education, and visual impairment should be directed to:

ROBERT B. MCINTYRE, Ph.D.
Chairman, Education of Exceptional Children
School of Education
University of Southern California
Los Angeles, California 90007

Inquiries about fellowships in the area of deaf and hard of hearing should be sent to:

EDGAR L. LOWELL, Ph.D.
Administrator, John Tracy Clinic
806 W. Adams Blvd., Los Angeles, California

Inquiries about fellowships in speech should be sent to:

WILLIAM H. PERKINS, Ph.D.
Director, Speech and Hearing Center
University of Southern California
University Park
Los Angeles, California 90007

UNIVERSITY OF SOUTHERN CALIFORNIA

Summer Session 1967

Sixth Annual Series of

Distinguished Lectures in Special Education

4:00 p.m. Thursdays

The first two lectures will be in Founders Hall 133.
All the rest will be in Hancock Auditorium.
No charge for attendance

June 29 A Personal Odyssey in Speech Therapy
Lee Edward Travis, Ph.D.
Professor and Dean
Graduate School of Psychology
Fuller Theological Seminary

July 6 Integration—The Challenge of Our Time
Berthold Lowenfeld, Ph.D.
Research Professor
Frederic Burk Foundation for Education
San Francisco State College

July 13 Strengthening The Self-Concept
Beatrice Wright, Ph.D.
Professor of Psychology
University of Kansas

July 20 Goal Setting in Teaching The Retarded
William W. Lynch, Ph.D.
Professor of Education and Chairman, Educational Psychology
Indiana University

July 27 Prescriptive Teaching: An Integrating Concept
Laurence J. Peter, Ed.D.
Associate Professor of Education
University of Southern California

August 10 IRCOPPS and its Relation to the Field of Special Education
Donald G. Ferguson, Ph.D.
Associate Director
Interprofessional Research Commission on the Pupil Personnel Services
University of Maryland